THE

GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL XL.—THIRD SERIES.

JULY TO DECEMBER, 1906.

LONDON:
41, WELLINGTON STREET, COVENT GARDEN, W.C.
1906.

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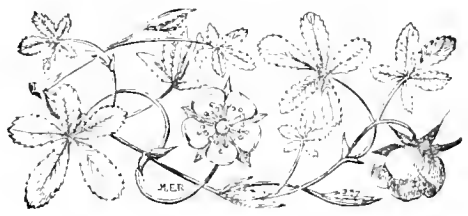

THE
Gardeners' Chronicle

No. 1,019.—SATURDAY, July 7, 1906.

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ILLUSTRATIONS.

THE AUSTRIAN BRIER.

WHAT is the Austrian Brier, and whence did it come? These questions occurred to us in a singular way. Not long since a correspondent enquired about a yellow-flowered Rose occurring in Syria, where the profusion and beauty of the flowers were very noteworthy, as noted also on the slopes of Lebanon by Sir John Llewelyn. From the description given, we conjectured that the plant was the Rosa lutea of Miller, of the *Botanical Magazine* (tab. 303), and of Lindley's *Monograph of Roses* (1820, p. 84). This conjecture was verified by the inspection of Syrian specimens obtained subsequently by Mr. Arthur Sutton. This plant was called by Linnæus Rosa Eglanteria, a name adopted in the *Index Kewensis*, which is unfortunate for many reasons, which we need not discuss here. When the Syrian flowers just mentioned were subsequently submitted to Col. Prain, the Director of the Royal Gardens at Kew, he at once recognised them as those of an Indian Rose—R. Eglanteria of Linnæus, which is, as we have said, synonymous with R. lutea of Miller. It is described in Sir Joseph Hooker's *Flora of British India* (II., 1897, p. 360), and stated to be a native of the drier parts of the Himilayas from Kistwar westward, and in Western Tibet. Afghanistan, Asia Minor, and Siberia are also mentioned as countries wherein this Rose is found native. Hooker expressly calls this the Austrian Rose, and cites Jacquin, *Hort. Vindob*, I., t 1. Nicholson also calls it by this name. Sir Dietrich Brandis and Boissier both name it Rosa lutea. Boissier in his *Flora Orientalis* (II., 1872, p. 671), mentions the "Persian yellow" as possibly a form of this species (lutea), and in William Paul's *Rose Garden*, Rosa lutea is made to include the following varieties: Copper, double yellow, Harrisoni, a hybrid said to have been introduced from America, Persian Yellow, etc. In Gibelli's *Flora Italiana* (p. 677) Rosa lutea is mentioned as growing wild in hedges in Piedmont, Venice and Naples. Gremli, in his *Flora of Switzerland*, translated by Poitson, speaks of this species as apparently quite spontaneous on the gypseous rocks near Nax, Derasme, and *Naudin Manuel* (p. 102) remarks that it (lutea or Capucine) seems to be indigenous to the centre and south of Europe, where, however, it may be merely naturalised. Coste in his *Manual of the Flora of France* does not mention it, nor is it entered in the Belgian floras. Nyman in his *Conspectus Florae Europae* tells us that R. lutea has been mentioned as occurring in Southern Europe, but that it is there only sub-spontaneous. Lindley in his monograph above cited mentions a variety punicea, "floribus bicoloribus," which we mention because he cites as synonymous R sylvestris Austriaca, flore phoenicco, *Hort. Angl.* 66, 18, and R. lutea bicolor, Jacquin *Hort. Vind.*, t. t. 1.; *Sims Bot. Mag.*, t. 1077, and others which it is not necessary for our present purpose to enumerate. Crépin included the species lutea in his section Luteae. Baker in these columns, August 15, 1885, p. 199, kept up Miller's name of lutea and arranged it in his group Rubiginosae, but in his more recent revision in the *Journal of the Linnean Society*, February 16, 1905, he alters his opinion, adopts Linnæus' name of Eglanteria (giving Miller's name lutea as a synonym), and places it in his Group VII. Spinosissimae. We might pursue this part of the subject much more fully, but only at the risk of wearying the reader.

From what has been said it seems clear that Rosa lutea or the so-called Austrian Brier is of Eastern origin and that it is not really native in any part of Europe, though met with here and there in a naturalised condition. How it received the name Austrian is a mystery, though it is easy to conjecture that it may have been introduced from the Levant into Austria and distributed thence into Flanders in the 15th or 16th century. Thus Dodoens and Bauhin both speak of Rosa lutea, but we have not their works at hand to verify our reference. Matthiolus in his *Commentaries on Dioscorides* (1558) mentions Roses growing in Italy as conspicuous for their golden colour (quae aureo colore fulgent).

Our own Gerard, who is generally rather credulous, narrates the following story, but he publishes it with all reservations:—

"The yellow Rose which (as divers do report) was by Art so coloured, and altered from his first estate, by grafting a wilde Rose upon a Broome-stalke; whereby (say they) it doth not onely change his colour, but his smell and force. But for my part I having found the contrary by mine owne experience, cannot be induced to beleeue the report for the roots and off-springs of this Rose have brought forth yellow Roses, such as the maine stocke or mother bringeth out, which event is not to be seen in all other plants that have been graffed. Moreover, the seeds of yellow Roses have brought forth yellow Roses, such as the floure was from whence they were taken; which they should not do by any conjecturall reason, if that of themselves they were not a naturall kinde of Rose. Lastly, it were contrary to that true principle, *Natura sequitur femina quodque suae*: that is to say. Every seed and plant bringeth forth fruit like unto it selfe, both in shape and nature: but leaving that errour, I will proceed to the description: the yellow Rose hathe browne and prickly stalks or shoots, five or six cubits high, garnished with many leaves, like unto the Muske Rose, of an excellent sweet smell, and more pleasant than the leaves of the Eglantine: the floures come forth among the leaves, and at the top of the branches of a faire gold yellow colour: the thrums in the middle, are also yellow which being gone, there follow such knops or heads as the other Roses do beare."

The double form is also mentioned by Gerard, who speaks of it as "a prime rarietv about London, where it is kept in our chiefe gardens."

Parkinson in his *Paradisus* (1629, p 417) thus speaks of the single yellow Rose:—

"16. Rosa lutea simplex. The single yellow Rose. This single yellow Rose is planted rather for variety than any other good use. It often groweth to a good height, his stemme being great and wooddy, with few or no prickes upon the old wood, but with a number of small prickes like haires, thickeset, upon the younger branches, of a darke colour somewhat reddish, the barke of the young shootes being of a sad greene reddish colour: the leaves of this Rose bush are smaller, rounder pointed, of a paler greene colour yet finely snipt about the edges, and more in number, that is, seven or nine on a stalke or ribbe, than in any other kinde, except the double of the same kinde that followeth next the flower is a small single Rose, consisting of five leaves, not so large as the single Spanish Muske Rose, but somewhat bigger then the Eglantine or Sweete Briar Rose, of a fine pale yellow colour, without any great sent (sic.) at all while it is fresh, but a little more, yet small and weake when it is dryed."

The same author in his *Theatrum*, published in 1640, speaks of the vermillon Rose of Austria, or Rosa sylvestris Austriaca, quoting, no doubt, from his Flemish predecessors.

Then we come to Philip Miller, who, in the eighth edition of his *Gardener's Dictionary*, speaks thus of the Austrian Rose. We quote the eighth edition as being the one in which the Linnean nomenclature for plants in general was first adopted, but, no doubt, the details relating to this species were also printed in the earlier editions. It will be observed that the plant he describes is the one with copper-coloured flowers, which he differentiates from the "single yellow Rose":—

"The twelfth sort is commonly called the Austrian Rose. The stalks, branches, and leaves are like those of the last [the single yellow variety], but the leaves are rounder; the flowers are larger; the petals have deep indentures at their points; they are of a bright yellow within, and of a purplish copper colour on the outside; they are single, have no scent, and soon fall away. There is frequently a variety of this with yellow flowers upon one branch, and copper colour upon another. This sort of Rose loves an open free air and a northern aspect."

This yellow Rose has also been confounded with R. sulphurea and was by others considered to be a yellow form of R. gallica, but both these suggestions may, we think, in the face of the evidence here summarised, be dismissed as untrustworthy. *M.T.M.*

CELMISIAS.

THE Celmisias constitute a very charming genus of New Zealand plants, known in their own country as the Mountain or Horse Daisy—why horse, I wonder? They do not seem to be as well known in this country as their beauty and good habit of growth would lead one to expect; for to a very handsome blossom they add the attraction of foliage which is always decorative, and at its best period very handsome.

Their stiff, compact leaves, with matted, flannel-like lining on the undersides, are often covered on the upper side with silky hairs lying pressed down on the leaf, giving a silvery appearance to the whole plant.

After they are once established their culture appears to be quite simple. We grow them in sunny places in the valley, raised a little by preference, and with ample drainage; and though generally giving them a special mixture of soil which contains always a good deal of leaf mould, a rather better mixing than usual of our own very sandy soil, and some sharp river sand added, we have some plants growing quite contentedly in the ordinary rockery soil, which has had lime freely mixed with it. So that though lime is not indicated, they do not seem to be hostile to it. We grow them entirely without protection, and some of our plants have passed through four or five winters without suffering any apparent injury. Though they look a little sorry for themselves sometimes during the winter, they do not seem really to suffer, and they flower vigorously when June arrives.

When the plants have made good growth and developed a fair number of crowns they can be lifted in the autumn, and where a root or two can be secured with the offset, as is generally the case, they can be safely divided and replanted at once. They do not strike readily with us if without roots, under cold frame treatment.

If ripe and mature seed can be secured it germinates freely in about seven or eight months if sown in the autumn, or in about three or four weeks if sown in the spring under ordinary cold frame treatment, but as we find much, even of our own seed, is immature, it is worth while to go over it carefully, when it is easy to select plump, matured ones, if there are any, as it may be that in a whole seed-head there are none really likely to germinate. The dangerous time in the life of the seedling appears to be between the period when it has formed its second pair of leaves and its thorough establishment in its new quarters, whether it be thumb pot or box. Unless the water can is very carefully used the young plants seem liable to rot off at collar, and we have suffered some wholesale disasters at this period. We like to get them out as soon as we can into their permanent places, as the long roots of the young plants are easily broken, and seem to require greater freedom than they can have in a pot.

Generally speaking they may be said to want no coddling, but ask only for care in growth and plenty of sunshine and good drainage in after life. The species that have flowered here so far are C. spectabilis, C. coriacea (two forms, green leaved and silver leaved), and C. Monroi. We have had coriacea with flowers about 3 inches long. There are young plants coming along of six or seven other species, some of which should flower next year. *S. Marshall Bulley, Hants.*

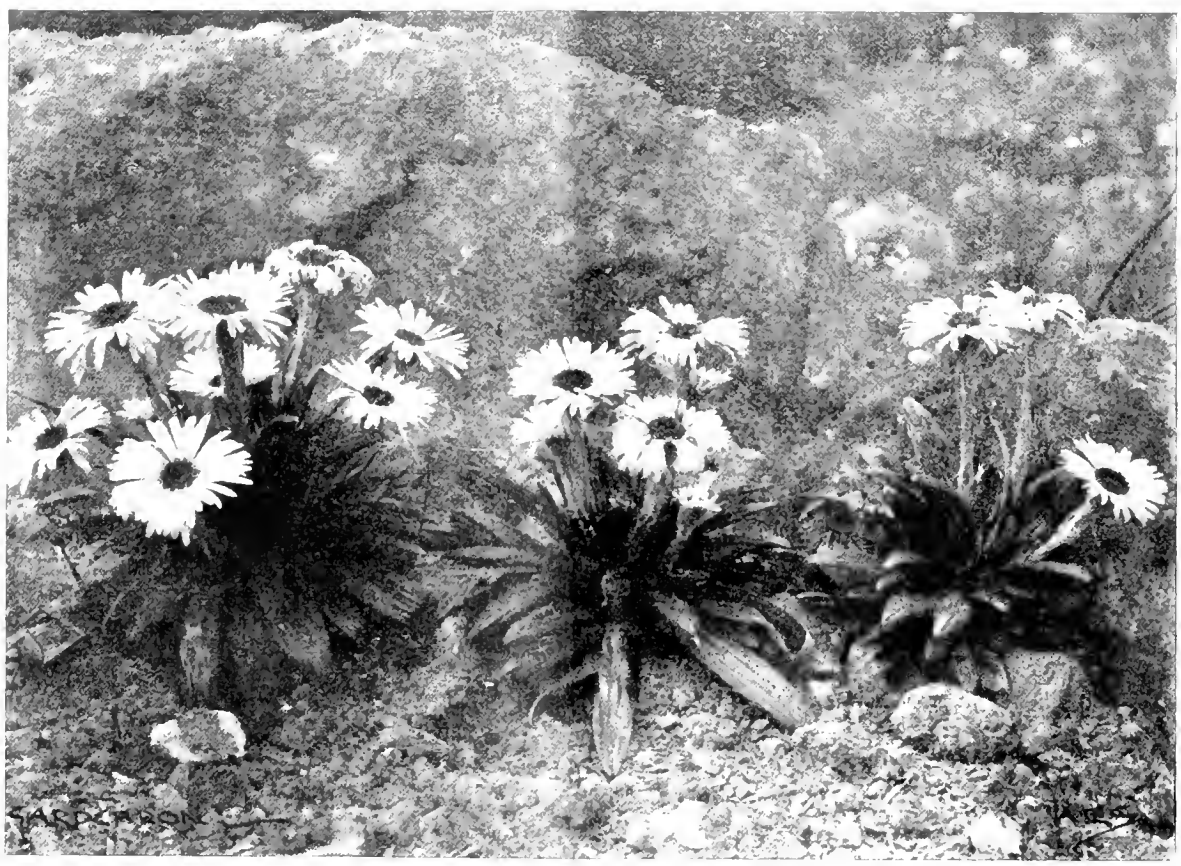


FIG. 1.—CELMISIA SPECTABILIS FLOWERING ON MR. BULLEY'S ROCKERY.

WATER GARDENS.

(Concluded from page 100.)

THE ROCK-POOL.

A FEATURE worthy of careful study in the formation of rock-pools is the advantage to be gained by excavating and preparing a much larger site than is actually required for the proposed area of water; not only does this admit of all the cement work being hidden, but excellent and ideal conditions are secured for the cultivation of marsh and bog plants without further trouble with regard to water supply. Presuming that a rock-pool 200 square feet in extent is proposed to be made, an area of 300 square feet should be excavated, and the bottom and sides securely cemented, as though 300 square feet of water surface were really required. Define the actual pool 200 square feet in extent, inside the basin, by placing large boulders that will serve to keep the soil back, and fill in the intervening space between the series of boulders and the cement sides with rubble to the extent of a few inches in thickness; then fill up with soil or peat, or both, according to the plant's requirements. A footway across this anywhere must be made with flat boulders resting on the cement bottom to form a series of closely laid stepping-stones broad enough to give a firm foothold, and they may be nearly or quite hidden with soil or shingle. A similar footway, if desired, can be made at the pool's margin. Thus planned the rock-pool will show no cement sides, the weakest part of the basin is secure against the action of the weather and against pressure, and a more natural-looking pool is the result, because one can plant around it many beautiful bog plants that make all the difference between a water garden and a hole with water in it. The water area need not be large, and if there is a large surface it may be covered with a number of the lesser Water Lilies to break up its area into smaller patches, and thus communicate to the rock-pool the ruling feature of the rock-garden—infinite variety.

Here, too, collections of plants are admissible without fear of a scrappy picture: of Nymphæas, a selection could be made of the white odorata, odorata minor, and pygmæa alba, small flowered, smaller flowered, smallest flowered respectively. Numerous pink and red Water Lilies of the Laydekeri group, such as lilacea, purpurata, and rosea prolifera; the pretty Nymphæa sanguinea, whose flowers are exceptionally dark red, whilst a good yellow will be found in odorata sulphurea or pygmæa Helvola, both gems that thrive well in the rock pool. Plant these in small baskets or in turf

mounds, as convenience may require. Rodgersias, Podophyllums, Meconopsis, many of the lesser Cypripediums, Trilliums, Orchis, Eomecon, a few of the lesser reeds and sedges, Galax, Shortia, Sanguinaria, Chamælirion, and the slender American Lilies will thrive apace in the wet soil around the pond and inside the cemented-containing basin, sites being raised up for those preferring drier conditions. In the water Frog Bit, Cabomba, Vallisneria, Limnanthemum, and Hottonia can be grown, whilst Azollas might have a little pool in the bog-bed, from which they could not escape. Sagittaria gracilis will represent the Arrow Heads. Skirting the pond may be placed patches of Primula rosea, P. sikkimensis, and some of the best forms of P. japonica, such as alba, sanguinea and splendens, with Gentiana septemfida, Iris cristata and verna among them.

of water that have served their purpose for a season or for all time. One can grow a few patches of Water Lilies in any moat, and many curling ponds I have seen in Scotland would certainly become more ornamental in summer if a few groups of Water Lilies adorned their generally uninteresting surfaces. They could be grown in baskets, and would not in the least degree interfere with the enjoyment of the "Roaring Game" in winter when they were resting quietly.

The ornamental basin or fountain is the greatest puzzle of all to plant. Such erections require but the slightest touch to do all that is required, and three or four small growing Water Lilies growing in open pans of Japanese or other ware to correspond with the materials of the fountain will prove that touch. If there is a jet of spray plant in that; if the water trickles and arrange the tubs in any way you choose, either in straight lines alongside a pathway, or, if the slope is limited, and places are required for a number of tubs, arrange them in the form of the letter S to get the maximum benefit of the fall of water on such a limited slope. Sink the tubs into the ground for half their depth, and convey with small iron water-piping the overflow of the uppermost tub to the next, and so on; fill each tub with good soil up to the ground level and with water up to the brim; plant from one to three Water Lilies in each, according to their strength; three plants of any of the pygmæa group will be readily accommodated in one tub, but one only of the odorata and Laydekeri groups will suffice. Plants may now be disposed around the tubs in the form of an attenuated but informal bed, choosing for the purpose any of the lesser Spiræas, the choicer forms of British Ferns, Astrantias, Miscanthus, Phormiums, Phlox, Irises of the Germanica and beardless groups, and any other plants whose flowers and foliage communicate an impression of waterside vegetation. Hide the tubs as much as is possible, but do not densely shade them, or the Water Lilies will find the water too cool for their well-being. There are scores of ways of using half-buried tubs effectually without the tub itself being such a dominant feature as now so often obtains, and many a novel method can be designed on the spot of so arranging tubs and plants that the latter appear to have possession of the site. One cannot expect an ideal water garden from the use of tubs, but a lot of very interesting plants can be well grown in them, and the plot containing them can be made as picturesque as one could wish.

George Bacon Mallett, Colchester.

FIG. 2.—CELMISIA CORIACEA, FLOWERING AT GLASNEVIN, IRELAND.

(For text see page 2.)

The rock-pool has this great advantage that will appeal to many—it enables one to grow a large collection of small plants without fear of spoiling its effect. As the rock-garden is the recognised home of the miniature representatives of the Alpine Flora, so may the rock-pool be regarded as the home of the miniature subjects in the water-loving flora.

THE MOAT, THE CURLING POND, AND THE ORNAMENTAL BASIN.

The more formal the environment of the water garden becomes the fewer are the opportunities offered to the planter for the formation of a realistic water scene of real merit. The margins of both the moat and curling pond are not generally fitted for a successful planting of waterside vegetation, but one can generally do something to alter the aspect of the dull stretches slowly so that the temperature of the water in the basin is normal, such Nymphæas as pygmæa Helvola, pygmæa alba, Laydekeri lilacea, and chrysantha may be grown in it quite well. If a persistent display of flowers is desired, grow a few additional plants in a reserve tank to replenish the fountain as occasion requires. Leave quite two-thirds of the water's surface unplanted; a lake, pool, or tank quite covered destroys the keynote of artistic water gardening.

TUB-GARDENING.

This method of growing water plants has not reached the highest limit of excellence possible for it. Although a series of tubs or half barrels are in no wise ornamental, it is not difficult to make them so, or to hide them altogether. Choose, if possible, a slope facing south for a site, provide a small supply of water at the top,

NOTICES OF BOOKS.

A TEXT BOOK OF BOTANY.

THIS is a small treatise prepared by M. Yates, and published by Whittaker and Co. It is intended for the use of students preparing for the Civil Service, London University, Cambridge Local, Oxford Local, College of Preceptors, and South Kensington examinations. The plan of the work comprises the explanation of the principal technical terms in common use. Thus we are told that a "runner" is an underground stem, and as an illustration the Strawberry is cited and even figured, but we think the youngest boy in the garden would know that the Strawberry runner is produced above ground. We doubt also whether the examiners would look kindly on such a definition as this:—"A seed is a body produced by the agency of a flower within the ovary or seed-box. L. *ovum* an egg." If this means that the ovary is synonymous with the ovum, or egg, we fear the examiners would frown, and certainly that would pronounce the definition as inadequate.

The definition of an "inferior ovary" as growing "from below the calyx" is more specious than real, and the word "axillary," as used instead of axile in describing one mode of placentation, conveys a quite erroneous impression. The explanation of fertilisation as the "process by which the pollen-cells are conveyed into the ovary, so as to enable it (the ovary) to produce the seeds," is scarcely more accurate. Misprints will, of course, intrude themselves in such a book, but they are in this case rather numerous, and sometimes embarrassing, as when we read of an "Eteris" of achenes in the Buttercup. Instructions are given as to the method of describing plants, and over 200 questions are added, taken from the papers set at various examinations. Had the author studied some of these questions carefully he (or, query, she) would have avoided some of the doubtful statements to which we have alluded. The book is copiously illustrated, and has an index.

CANN HOUSE.

(See Supplementary Illustration.)

CANN HOUSE, the residence of Mr. H. Grigg, is distant about five miles from Plymouth, and is situated in close proximity to one of the creeks of the River Tamar. The ground slopes steeply down from the house to a long and winding dell or coombe, along which, at the lowest level, meanders a clear stream. The surroundings of this stream, by the side of which runs a path, are for a long distance tastefully planted with trailers, dwarf shrubs, moisture-loving plants, and alpines between the rocks on the higher levels of the banks. The grounds are excellently laid out and planted, and an object-lesson is afforded of the fine effect produced by grouping the same species together rather than dotting single plants of various species indiscriminately about, a practice too often followed in gardens. A large and representative collection of plants is grown, and on the higher ground many tender subjects do well, though in the lower levels by the stream-side, sharp frosts are often experienced.

Among the dwarfer plants doing well in the neighbourhood of the stream, where the rock-formed banks afford ideal sites for their culture, both in the sunshine and shade, were Ourisia coccinea, occupying a large space, Ramondia pyrenaica, and its white variety, R. serbica, Haberlea rhodopensis, Dryas octopetala, and D. Drummondi, Androsace lanuginosa, A. sarmentosa, A. Chumbyi, Anemone Pulsatilla in a dry spot; A. sulphurea in a damp one; A. Robinsoniana, covering a flat space about 7 feet across and in full bloom at the time of my visit in April, was a beautiful sight; I noticed also Primula megaseæfolia, P. marginata, P. viscosa, P. Sieboldi, out all the winter; with P. rosea and P. japonica margining ornamental water, in which the best of Marliac's Water Lilies are grown. Gentiana acaulis, G. verna, G. asclepiadea, and its white form, Podophyllum Emodi, and Galax aphylla were in the best of health. Among other plants may be mentioned Crinum turricum, and the rarer O. stellatum, Lithospermum prostratum covering the rocks with foliage and opening buds, Saxifraga longifolia, S. Gresebachi and others; Erythroniums in variety, Nierembergia rivularis, evidently happy, Iris juncea, I. tuberosa, and a large colony of I. lævigata occupying a level site higher up the stream; Tigridias, the Prophet Flower, Arnebia echioides, Dabeocia polifolia, and its white variety, Genm reptans; Edrianthus (Wahlenbergia) pumilorum, Fritillaria aurea, F. verticillata and others, Vaccinium, Vitis-Idæa, and Bryanthus empetrifolius. Tropæolum speciosum (the Flame Nasturtium), and T. polyphyllum rambled over the rocks at will. Shortia galacifolia was represented by twelve large plants, which were in full flower at the date of my visit, in one group in a sheltered and shady nook. In a damp spot and in partial shade, Meconopsis Wallichi grows to a height of 8 feet, and Astilbe Davidi lasts long in flower, while by the side of the stream are large colonies of Lomaria procera, the Ostrich Fern, Struthiopteris (Onoclea) germanica, Solomon's Seal, Saxifraga peltata, and Adiantum pedatum. Amongst other plants in the neighbourhood of the stream are Senecio chrysorum, with self-sown seedlings springing up around it; S. tanguticus, rapidly annexing a large space of ground; Mohopospermum cicutarium, Ligularia macrophylla, Phormium tenax, and its variegated form, as well as P. t. purpureum, P. t. macrophyllum, P. t. pendulum, and P. alpinum, while in an open spot Gunnera manicata spreads its enormous leaves, and hard by the tiny little G. magellanica shows its small, rounded foliage. A pleasing effect is obtained by the introduction of dwarf shrubs into the stream banks and the surrounding ground. Philesia buxifolia was the picture of health, and produces its Lapageria-like blooms in quantity; Daphne cneorum, often difficult to grow, was obviously at home, as was the pink New Zealand Broom, Notospartium Carmichaeliæ, Gaultheria procumbens, G. nummularifolia, and G. trichophylla spread over the rocks; dwarf Acers brighten the surroundings in summer and autumn with their richly-coloured leaves, while Azalea Anthony Koster and A. rosea flore pleno are charming in the late spring. Other shrubs include Cistus corbarensis, Corylopsis spicata, Grevillea rosmarinifolia, and G. sulphurea, Genista Ardoini, Pyrus nivalis, Spiræa gigantea, S. Lindleyana, and S. ariæfolia. A fine specimen of the Fan Palm (Trachycarpus excelsa) gives a tropical aspect to the spot, and there is a good example of Cupressus Lawsoniana Triomphe de Boskoop. Leaving the precincts of the stream for the higher ground, a fine mass of Erica carnea is passed, and the Pernettyas hard by berry well. In the other portions of the grounds a large collection of interesting shrubs, trees, and plants is grown. Amongst the shrubs I noticed Abutilon vitifolium, both the type and the white-flowered variety, Amelanchier canadensis, and A. Botryapium, which, though held to be synonymous, differ in foliage and flower, Arbutus canariensis, Azalea indica, and among the Berberis family a large group of B. stenophylla—a gorgeous sight when in full bloom, Buddleia Colvilei, which has flowered, Cæsalpinia japonica, and the rare C. (Poinciana) Gilliesi, which is 6 feet in height against a wall, Calycanthus macrophyllus, Carpenteria californica (see figs. 4 and 5), much healthier than is usually the case, Caryopteris Mastacanthus, Cistus ladaniferus, rare in gardens, Citrus trifoliata, 12 feet in height, which invariably flowers freely and also fruits; Clethra canescens, Cornus florida, C. Mas variegata, 10 feet in height and as much through, Corylopsis pauciflora, a large group of the new Cotoneaster angustifolia, Cytisus capitatus, C. nigricans, Daphniphyllum glaucescens, Disanthus cercidifolius, whose foliage turns a brilliant scarlet in the autumn, Distylium racemosum, Dremys aromatica, and the far more beautiful D. Winteri, Edwardsia (Sophora) grandiflora, and E. microphylla, both of which flower well; the gorgeous Embothrium coccineum, many Escallonias, among which were remarked E. Langleyensis ×, the Lovely Eucryphia pinnatifolia, and the scarcer E. cordifolia, Exochorda grandiflora, Fabiana imbricata, Fuchsia sellowiana, Genista tinctoria flore pleno, G. viminalis; the Snowdrop Tree (Halesia tetraptera), Hamamelis Zuccariniana, and the new H. mollis, Hydrangea quercifolia, Illicium religiosum, a pretty white-flowered shrub seldom met with, Lagerstroemia indica, another rarity, Ledum latifolium, Leptospermum lanigerum, Ligustrum coriaceum, groups of the best Lilacs, Loiseleuria procumbens, Loquat (Photinia japonica), Magnolia conspicua, M. stellata, M. Soulangeana, M. fuscata, Medicago arborea, Nandina domestica, Olearia Haastii, O. macrodonta, O. nummularifolia, very rarely grown, Olea fragrans, Osmanthus rotundifolius, Ozothamnus rosmarinifolius, Piptanthus nepalensis, Pittosporum Ralphii, and others; Pyrus Maulei grandiflora, P. Malus floribunda, and its variety atrosanguinea; many members of the Prunus family, including P. pendula, P. sinensis, P. Watereri, P. triloba, P. Davidiana alba and rubra, Rhapidolepis ovata, Rhododendrons, amongst which were R. Hodgsoni and R. racemosum, Rhus Cotinus purpureus, Ribes speciosum, Robinia hispida, Rubus deliciosus, Salvia coccinea, Senecio Greyi, Skimmia japonica, Solanum crispum, Spiræas in variety, Stuartia pentagyna, S. virginica, Styrax Obassia, Tamarix odessana, and T. Pallasi rosea, better known as T. hispida æstivalis, of which there was a large group of thirty plants that must afford a charming picture when their pink flower-plumes and feathery foliage are at their best; Tricuspidaria lanceolata, better known as Crinodendron Hookerianum, covered with bud, Veronica Hulkeana, Viburnum plicatum, V. macrocephalum, and Xanthoceras sorbifolia.

Of trees, the most noteworthy were Acacia dealbata; the Judas Tree, Cersis siliquastrum, Cornus capitata, better known as Benthamia fragifera, the new Davidia involucrata, the Honey Locust (Gleditschia triacanthos), the Kentucky Coffee Tree (Gymnocladus canadensis), Ilex latifolium, T. Taraio, Koelreuteria paniculata, and Parrotia persica, both very brilliant in their autumnal colouring, and Paulownia imperialis. Of climbers there were present Akebia quinata, Berberidopsis corallina, and Lapagerias, rose and white, with Tropæolum speciosum, all luxuriating on a shady wall, in front of which the Mocassin Flower (Cypripedium spectabile) grows with astonishing vigour; Clematis balearica and C. cirrosa climbing trees, C. montana rubra, newly introduced, Ercilla (Bridgesia) spicata, Hydrangea scandens, which had ascended the trunk of a giant Cupressus macrocarpa to a height of over 20 feet; Jasminum primulinum, Mandevilla suaveolens, Sollya heterophylla, Trachelospermum jasminoides, and T. japonicum maculatum.

In front of a sheltered south wall were growing some of the rarest and tenderest subjects, including Abelia floribunda, Agapetes buxifolia, Correa cardinalis, Crossosoma californica, Desfontainea Hookeri, Diosma gracilis, Eriostemon neriifolius, Libonia floribunda, Mitraria coccinea, and Olearia nitida. In the same border were a number of Irises, amongst which were I. gracilipes, I. cristata, I. fimbriata, flowering, I. Willmottiana, I. Warleyensis, I. bucharica, I. Douglasiana, I. bracteata, I. Purdyi, I. tenax major, and I. Oncocyclus hybrids as well as Calochorti, Gerbera Jamesoni, Tecophilea cyanocrocus, Gladiolus tristis, Ixiolirion Pallasi, Tulipa Greigi, and many rare bulbs. Amongst other plants grown were Calceolaria violacea, Convolvulus cneorum, Dendromecon rigidum, Desmodium pendulifolium, Hedychium Gardnerianum, which never fails to flower well every autumn; Ostrowskia magnifica, of which there are two fine groups in robust health, Phyteuma comosum, Rehmannia angulata, the beautiful Californian bush Poppy (Romneya Coulteri), and a colony of Watsonia Ardernei, which threw up twelve flower-spikes last year. Against the house were growing Azara microphylla, Ceanothus divaricatus, and C. Gloire de Versailles, Cassia corymbosa, Clematis indivisa lobata, M. gigantea, M. grandiflora, Roses and other plants. The glasshouses contained a select collection of subjects, one of the most noteworthy of which was a splendid specimen of Solanum Wendlandi. *S. W. Fitzherbert.*

THE LONDON MARKETS AND THEIR SUPPLIES.

(Concluded from page 408.)

THE BOROUGH.

SITUATED on the Surrey side of London Bridge, close to St. Saviour's Cathedral, this is one of the most cramped and inconvenient of all the London markets, yet the business transacted there is, of its kind, probably unsurpassed. For many years it has been as noted for its Potato trade as a neighbouring portion of the Borough High Street is for the Hop trade, and some millions of tons of the homely tuber have been sold in its limited area since I first became acquainted with the market. But, though Potatos are a great feature, other vegetables are also sold on an extensive scale, and fruits are dealt with largely, especially imported fruits, which are so popular with the masses, such as Bananas and Oranges. For South-Eastern London this market is very convenient as regards distance, and it is regrettable that it cannot be rendered more commodious and supplied with better approaches. The Borough Market Trust, in whom the management is vested, have effected several improvements, and the salesmen enjoy some advantages now which were foreign to them years ago. For instance, one part is well covered and lighted; but the whole

place is so restricted, and has such a mixed, confused appearance, that it will need a substantial advance in many directions before it can be regarded as a credit to a city like Southwark.

BRENTFORD.

Incidental mention was made of the Kew Bridge Market in the opening remarks of these articles; it only remains to add here that since these notes appeared the new market has been completed and opened. In many respects it is the best-designed and most spacious in the metropolitan district. Beyond this, from the way the trade is developing, it bids fair to rival in a few years some of the largest in the amount of business transacted. It can never be expected to equal Covent Garden for first-quality produce of any kind, but as it is so convenient for the West of London shopkeepers and providers, it is probable that high-class fruit and vegetables will in time have an important place in the market. At present good average fruit, vegetables, flowers, and plants, with imported fruits, hold the principal part of the trade. Immediately adjoining the London and South-Western and North-London stations, communication is readily established with the London and North-Western Railway, so that a wide area of the country can be tapped for supplies, as well as those which come by road from Western Middlesex and Surrey. The Brentford District Council is not likely to do a better service to their locality than has been rendered by the establishment of this handsome market.

LOCAL MARKETS.

Beyond the depôts at St. Pancras and King's Cross, chiefly for Potatos and other vegetables, there is little other market accommodation in the metropolis, with all its millions to be supplied. At the fruit enquiry instituted by the Board of Agriculture in 1904 some difference of opinion was expressed as to the desirability of increasing the number of markets. Mr. Wm Poupart, of Twickenham, and Mr. E. Rochford, of Cheshunt—both weighty witnesses—were not in favour of such an extension, but appeared to think that concentration in a few centres was preferable for growers and buyers. On the other hand, Mr. W. J. Lobjoit, of Heston, and Mr. W Sams, of Worthing, were of the opinion that we cannot have too many markets." Even Mr. G. Monro favoured this view to some extent, for he said: "It is much better for a man with a small lot of goods to sell it in the locality in a local market than to go to the expense of a long journey, with commission for the sale of the fruit, and possibly it is not worth the salesman's while. These small consignments give a great deal of trouble."

But there is another aspect—namely, the benefit to the retailers and the public which arises from facilitating the progress of the goods from producer to consumer. Mr. Lobjoit touched upon this when he said: "If a municipal market could be opened in the south of London somewhere about Balham it would be a very great advantage, both to the people who live there as well as to the growers who send there. Does it not seem absurd that cartloads of fruit should be drawn past the shops up to Covent Garden, and then have to be taken back again to Balham?" It is difficult to conceive how two opinions can exist on this matter; the waste of time, the expense incurred, the risk to the produce are all opposed to the interests of grower, retailer, and consumer. Yet it is not only in South London, but in other districts of the metropolis, where the same anomalous state of affairs prevails. The large central markets have their special uses, and are indispensable; but when an assemblage of human beings reaches the magnitude that London has attained, judiciously-placed local markets, as concerning the food of the people, are quite as much a necessity as the means of locomotion upon which such huge sums are expended. *Lewis Castle.*

MOVING LARGE TREES.

THE Chestnut tree (see fig. 3) has had an uncommon experience, over and above that of being successfully transplanted after having attained the age of some 30 years. It was not decided until the last minute that this tree should be transplanted, and therefore it did not receive the preparation that was given to some other 32 specimens in the shape of root-pruning some months beforehand to cause the roots to throw out young fibres and make a compact ball close to the bole of the tree. Bearing this fact in mind I had a much larger circular trench dug out than usual, working well under the roots, and, after carefully wrapping round with mats the ball of earth thus made, the tree was ready for shifting.

The question was how? There it stood, weighing about four tons, too large for my tree shifting trolley, guarded in front by some three or four yards of newly made ground and a trench 4 feet wide and 3 feet deep.

It had to be moved, and we decided to pull it over into a horizontal position after fixing some strong chains round the ball, the chains being prevented from cutting in too deeply by placing pieces of wood at short intervals between the mats and the chains. The tree was then lifted out of its hole by means of an endless chain, lowered on to a platform arranged on rollers, rolled on to firm ground by manual labour and again lifted by the chain gear on to a stone trolley and wedged up to prevent its rolling off. After arranging several men to steady the top, it was drawn to its destination, some 600 yards distant, accompanied by the wondering gaze of some and the cynical smile of others.

Yet there it stands to-day in full leaf, a living testimony to the fact that although always desirable it is not absolutely necessary to prepare large trees twelve months before transplanting. In moving 33 large trees there are many incidents of an amusing and an annoying character, such as the giving way of a part of a brick drain picked up in one of the balls, an axle breaking, &c., but nothing of great interest to the readers of this journal. *John Kinmont, Westgate-on-Sea.*

FIG. 3.—CHESTNUT TREE 30 YEARS OLD MOVED WITHOUT PREVIOUS ROOT-PRUNING.

THE PROPAGATOR.

ROSES.

WHEN the shoots of Noisette, China (monthly), Roses, the earliest and the latest to bloom, Tea, and the so-called Tea hybrids, have become fairly firm in consistency, propagation by means of cuttings, furnished with a base of the older wood, may be undertaken on mild hotbeds made up of tree leaves and a small quantity of stable litter, and covered with an ordinary garden frame. Some gardeners prefer to place the hotbed on the north side of a wall, and to do so is certainly a saving of labour in the matter of shading, but in no other way.

If many cuttings are to be made, the hotbed, when it has reached its greatest degree of heat, should be made level and firm, and receive a 4-inch thick layer of leaf mould, into which the Rose roots will enter almost as soon as they form, deriving nutriment and moisture therefrom; otherwise they are apt to turn black and die. Over the leaf mould a layer of sandy loam should be laid to the depth of 4 inches, made firm, smooth and level. When the heat has declined to 75° Fahr. the cuttings may be made and inserted in rows, and barely touching each other.

In making them, remove the unripe tip, and the leaves so far as the cuttings enter the soil, and the end leaflet on each. As has been stated, each cutting should be provided with a "heel." A light having been filled with cuttings, the bed of soil should receive a thorough application of water (warm preferably), and the light should be put on, with a mat over all, if the sun be shining strongly. When the frame is filled with the cuttings, it should be shaded only when the sun is upon it, and kept close, except for the space of half an hour between 8 and 9 a.m., when the lights should be drawn off in order to dissipate moisture. When it is noticed that the cuttings generally have become callused, the amount of shading may be lessened, and the frame kept open for an hour, until, as roots form on the cuttings, more and more air may be admitted, and the shading dispensed with. In a month the

operation will be completed, and the little plants may then be fully exposed. The plants may remain in the frames till the spring, treating them as hardily as may be desirable.

If the cuttings are inserted singly in small sixties (3-inch pots), the routine is almost the same, excepting that spent Mushroom bed dung or coarse leafmould may be put over the one crock at the bottom of the pot.

The rose shoots, before being made, should be kept from flagging by immersing them in a large watering-can having a small quantity of water in it—no time being lost in putting them into the cutting frame after they are prepared.

LAURUS CAMPHORA.

IN this month cuttings may be inserted of Laurus Camphora, in pots or pans, filled with hard peat, such as is used for Ericas, and surfaced with about an inch layer of washed sand. Choose cuttings of this year's shoots, strong and well developed, with plenty of leaves and strong buds, taking them from the upper side shoots, and every leaf should be preserved, even those close to the base. Insert the cuttings 1 inch deep in the sand, so that the bases just touch the soil. Apply water, cover the pans or pots with bell glasses, and afford a bottom heat of 76°-86°, with regular application of water and the necessary shading. In about five weeks the uppermost buds will have unfolded, a sign that roots have formed, when air may be afforded, and a week later the plants may be potted, an operation requiring great care owing to the stiffness and inelasticity of the roots.

MISCELLANEOUS.

JUNE and July are good months for the budding of variegated Hollies, and the male Aucubas on plants of the female variety, for striking cuttings of Eupatoriums on mild bottom heat, and propagating from the old leaves Rex and other leaf Begonias, and Gloxinias under bell glasses, without bottom heat.

The following species of shrubs and trees may be layered in the next two months:—Amorpha, Azalea, Berberis, Bignonia, Calycanthus Ceanothus, Cercis, Clematis, Cornus, Cotoneaster, Deutzia, Euonymus, Œsculus macrostachya, Laurus, Magnolia, Ornus, Pæonia, Rhamnus, Rhododendron, Rhus Cotinus and others, Ribes on the soil, Rubus (the points of shoots), Spiræa lævigata, which grows with difficulty from cuttings, and Viburnums, which do not strike from cuttings. *F. M.*

CARPENTERIA CALIFORNICA.

ALTHOUGH introduced from the Sierra Nevada in 1880, this summer-flowering, somewhat tender shrub is still not in general cultivation.

It belongs to the Nat. Order Saxifragaceæ, and makes a nice bush when planted in a sheltered but sunny position out of doors. The flowers are produced in clusters at the termination of the branches; they are white, about 2 inches in diameter, and in general appearance are not unlike those of a Cistus. The leaves are broadly lanceolate and entire, from 2 to 3 inches long, with a whitish minute pubescence on the under surface. It is figured in the *Botanical Magazine*, t. 6911.

The plant represented by the photograph (see fig. 4) has been in its present position in the Cambridge Botanic Gardens for some years, and is now a fine bush 4 feet in height and as much through, and produces a good display of flowers every summer. *E. J. Allard.*

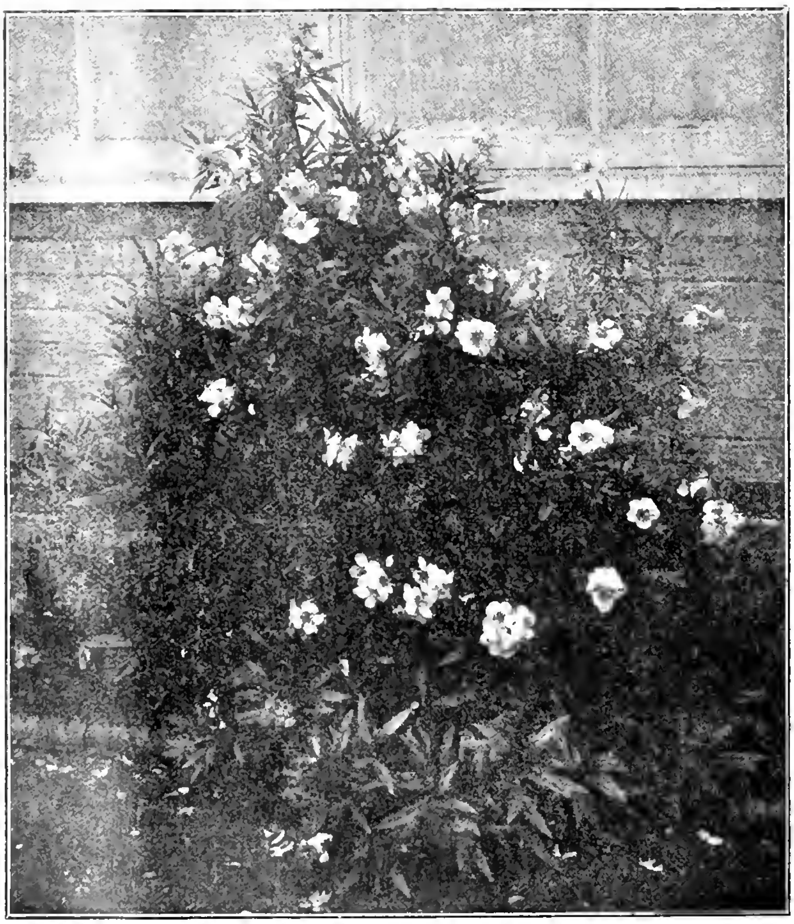


FIG. 4.—CARPENTERIA CALIFORNICA FLOWERING IN CAMBRIDGE BOTANIC GARDENS.

PLANT PORTRAITS.

LILIUM BROWNII, VAR. LEUCANTHUM.—*Horticulture*, June 16.

ROSE MRS. THEODORE ROOSEVELT, H.T. Creamy-white, flushed with pink, of American origin.—*Rosen Zeitung*, June.

VEGETABLES.

WAX PODDED AND BUTTER BEANS.

IT was a good thought of Mr. Gibson's to draw attention in his *Kitchen Garden Calendar*, in the issue of June 9, to these Beans, comparatively unknown to gardeners and their employers in our country. There is, as I am aware, an unreasonable prejudice on the part of some on account of the colour—a pale yellow; but in view of these Beans being of an agreeable flavour, and very tender when cooked, and in some varieties destitute of parchment, and abundant bearers, this objection ought not to stand in the way of their use for the best table. Indeed, we ought to welcome so nice a vegetable which adds variety to the dinner table. There are climbing varieties of Butter Beans, which, like Scarlet Runners, need support for the bine; and dwarf growing varieties such as the Sugar Bean mentioned by Mr Gibson. The seeds of these beans are, like the pods, of a light yellow or creamy colour, and when ripe they may be employed similarly to the Haricots of the shops. All the varieties need a warm site and to be sown not earlier than the last week of April, and then onwards to the end of the month of June or the middle of July, according to the climate of the district. A south border affords the best position for the earliest and the latest sowings. These beans are usually served in Continental households with melted butter, the one British sauce, as our foreign friends believe, or with a slightly acid one. As for example the so-called *einbrenn* of the German cookery-books, which is compounded of a little shredded onion cooked in a small quantity of butter to a light brown colour in a stewpan, to which some good soup is added, and finally a table-spoonful or lesser quantity of vinegar or lemon juice, and the beans, strained from the water in which they were cooked, stirred into the sauce and warmed up—not boiled.

Plain boiled Butter Beans form an excellent addition, when allowed to get quite cold, to mixed salads. In preparing the pods for the table it is not considered necessary to shred them according to English methods, and thus boil out their flavour, but simply to break each pod into two or three pieces after removing the stalk and tip. If a Bean does not snap easily across it is too old and must be cast aside. The protuberance of the seeds in the pods is not a certain sign of unfitness for the table, as would be the case with green French Beans. *F. M.*

SPRING CABBAGES.

I HAVE seen from week to week in the *Gardeners' Chronicle* notes respecting the qualities of the varieties, Ellam's Dwarf and Flower of Spring. Ellam's Dwarf is very valuable here, being of good flavour, very early, and very few bolt to seed. It is exactly what one requires in a spring Cabbage. "Flower of Spring" requires much more time to come to maturity and it is given to "bolting." I prefer Sutton's Favourite to Flower of Spring. *F. W. Pratt, King's Court, Chandlersford, Hants.*

HAVING followed with interest the opinions of various correspondents in the *Gardeners' Chronicle* upon the merits of different varieties of Cabbage for early supply, I should like to say that my experience of Ellam's Early Dwarf does not coincide with that of the two writers in a recent issue. Here, it has always shown a tendency to "bolt." Flower of Spring has proved itself superior in this respect. Some four or five years ago I made a trial of ten sorts, each variety being respectively "the earliest and most desirable variety in cultivation." The result was, in racing parlance, an easy first for a variety supplied by the Messrs. Dicksons, of

Fig. 5.—A spray of Carpenteria californica; flowers white, fragrant.

(For text see page 6)

Chester—named by them "First and Best," a name that I have since found to be well bestowed, and one that the variety has worthily upheld with me. This variety is now my mainstay for a first early; it is of dwarf habit, good flavour, and fair size, combined with very few outer waste leaves; and, what is more to the point under discussion, a non-bolter. It is, in my opinion, far superior to Ellam's in every way. "First and Best," with "Flower of Spring" and Webb's Emperor for succession, form a trio that is, to my mind, very hard to beat. *H.B.J., Birchley Park, Kent.*

EXHIBITING VEGETABLES.

I NOTE the remarks of "A.D." and of Mr. Pritchard anent the above subject in a recent issue; but their comments do not alter the fact that Parsley *is* shown in pots in Scotland as a vegetable. I admit no wise judge would disqualify in the circumstances I referred to, where six sorts of vegetables were shown with Parsley as a foundation, but all judges are not wise—as we know from experience. In the circle in which "A.D." moves and judges, I quite understand that Parsley is used as a groundwork for vegetable collections, but what would "A.D." and "Mr. P." do if they were called upon to judge a collection consisting of Cauliflower, Leeks, Onions, Turnips, Potatos, and a beautiful plant of Parsley in a pot, as we see at Scotch shows, staged as six varieties of vegetables? When I learn that Selaginella is a table plant, I will consider Mr. Pritchard's references *apropos*. *J. A. Simpson, care of Dobbie & Co., Rothesay.*

SHALLOTS

WHERE large quantities of this useful member of the Onion tribe are required, it is well to follow the practice of the market growers in the Channel Islands and sow the seeds of the plant instead of planting the bulbs in early spring, the produce being much finer as regards size. Those who may elect to do this should leave bulbs from the early planting, when they will flower in good time for maturing their seed by the end of September or earlier according to climate. The seeds can be stored till March and sown at the same time as the main crop of Onions, and in the same manner as regards depth of drill, firming the soil, and rolling it after the sowing is made. New seed should not be sown thickly, and in no case should the seedlings be allowed to remain nearer together than 6 inches in the rows, the latter being 9 inches apart. Seedling Shallots have been grown to a weight of 4½ ounces, but a lesser weight is usually the most useful and economical in cookery. *F. M.*

The Week's Work.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Spring Cabbages.—About the 20th of this month is an excellent time to make the first sowing of this vegetable, to be followed by a later sowing a fortnight afterwards. The provision of a good seed bed is essential, for in dry seasons there is often a difficulty in getting the seeds to germinate strongly and evenly. If the weather is very dry it is advisable to soak the ground a few days prior to sowing rather than damp the soil after the sowing has been made, which would tend to cake the surface. Sow thinly and prick the seedlings off at 3 or 4 inches apart into rich soil. The growth will be somewhat retarded by this process, but it will result in a gain in the end. In light soils and where the rooting medium is suitable pricking out is less essential than where the soil is of a heavy nature. Sow the variety which suits the locality best. I cannot recommend a more suitable one than Flower of Spring, which seems to be successful everywhere.

Shallots.—The earliest bulbs of these will soon be ripening, and as soon as growth is completed lift and dry them carefully in readiness for storing later on. It is usual to dry these in the sun directly after they are lifted, but I think they are not so likely to lose weight if dried in the shade. When they have been cleaned for storing they will be in a better condition for full exposure to the influences of wind and sun.

Carrots.—Green-fly has been troublesome on Carrot-tops in many places. If the foliage suddenly droops down, you may be sure it is attacked by fly, but being of the same shade of colour as that of the foliage the pest is not readily detected until the damage is done. It appears to be a very small species of green-fly that is troublesome here. Syringe the plants with soft-soap and water or diluted quassia water, which if applied once or twice each week will keep the pests at bay.

Cauliflowers.—These will be rapidly "turning in," and a strict watch should be kept daily on the crop that no loss may arise through the "heads" losing their purity of colour through exposure to the influence of the weather. Very often Cauliflowers are left growing until they are long past their best, and subsequently given away as surplus, but if they had been cut at the proper time they would have been much more appreciated and more useful. Draw soil to the stems of young plants in exposed places to prevent them being blown about by winds. Amongst the best varieties tried here have been Dean's Early Snowball and Sutton's Magnum Bonum, and, whether grown in frames or in the open, they are of the best for early supply. There is still time to plant for succession. Plantations made now should come in at the end of the season and just in front of the early Broccolis.

Mushrooms.—At this season it is advisable to spawn a piece of meadow-land if Mushrooms are generally scarce in the fields in autumn. Unless spawn is in the ground no Mushrooms can be expected. Place pieces just under the turf 2 inches deep and a yard apart. With suitable weather conditions and soil, a crop may reasonably be expected later on; in any case, the method is well worth a trial.

THE HARDY FRUIT GARDEN.

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

Apricots.—These fruits are now swelling rapidly. Prune back outward-growing laterals, and nail in the shoots needed for extension. It is well also to tie in a few clean, healthy branches about the middle of the tree. Keep a sharp look-out for such insects as earwigs and woodlice, but if the walls and the trees are frequently syringed, and providing they have been attended to as advised, very few lodgings will be available for such pests. See that the roots are well supplied with water, and apply another mulching, for by this means the ground is kept from cracking. Borders under south and south-west walls become very hot and dry, and our borders situated in that aspect recently registered as much as 95° on the ground and 136° on the wall itself, the figures being taken at 3 p.m. Continue to syringe the foliage till the fruits begin to colour. Frogmore Early, as the name implies, is an early fruiting variety, and its fruits will soon begin to colour. They are small, but very useful, on account of their ripening early. The variety Large Early, ripening from the middle to the end of the present month, makes a good successor to Moor Park. Shipley's is a large cropper, the fruits being of a good size and splendid for bottling. Moor Park is a great bearer, and a general favourite. There are also several other kinds scarcely distinguishable from the last-named. The fruits should be gathered when ripe, and be laid on soft paper placed over a layer of wood wool.

Apples.—Early varieties of these fruits must not be allowed to suffer from want of water, or the fruits will not mature thoroughly, and early Apples are not of the best flavour unless thoroughly ripened. These apples very often ripen prematurely during a spell of hot, dry weather. Mr. Gladstone, Early Margaret, Early Harvest, and Irish Peach are the first kinds to ripen, and they are usually ready for gathering in July. Irish Peach, which, when well grown, is of excellent quality, is the latest, and to secure it at its best it should be thoroughly ripened on the tree and eaten immediately. It can be grown on cordon, bush, pyramid, and horizontally-trained trees. Remove all bad leaves from the trees by hand picking, or wash them off by heavy syringings. This procedure will also apply to all small fruit trees grown for special produce, for after the trees have had the points of the shoots taken out, or after they have been summer-pruned, a good washing cleanses the trees and frees them from all insects and small leaves which have been injured by aphis.

Raspberries.—These fruits will be ripening fast, and should have nets placed over them. See that this protection is sufficiently high, so that growth is not interfered with. If some T-shaped pieces of deal about 4 feet wide be nailed on to the wire supports the nets can be hung over these. Have the framework high enough to allow the top of the nets to be 7 or 8 feet from the ground, leaving a small opening, which should be tied with string, for entry. The fruits can then be gathered in a comfortable and business-like manner. The old system of nets simply flung on the canes does not protect much fruit, and the rods grow up through the meshes of the nets, allowing birds to settle and eat or damage all the best fruits. Raspberries are a heavy crop this year. Superlative, Hornet, Norwich Wonder, Baumforth's Seedling, and Fillbasket are among the best varieties.

Figs.—These trees are now making rapid growth, and should have their main branches secured to the wall. The tops of the growths should be taken out when sufficient wood has been made, as this will hasten the ripening of the fruits, and also assist the later growths at the base of the tree. See that trees in very dry positions are not suffering from lack of water. Disbud if too many growths are present, and pinch out the points of those that are growing too freely, or these will rob the weaker-growing ones. It is a good plan to place the fruits when ripening in small muslin bags, which, if tied fairly lightly about the stalks, will keep all insects away.

Peaches and Nectarines must be syringed and be well supplied with water. It is surprising what a large amount of moisture trees on a south wall require.

Fruit-room.—Keep this structure well ventilated and as cool as possible if fruit is still contained therein, but if all the fruit has been used, take the first opportunity to give the whole structure a thorough cleansing. Let the walls be limewashed, the wooden uprights and all the shelves scrubbed with hot water and soap. Every available crevice should be made thoroughly sweet and clean, so that it may be made wholesome for the reception of fruit. A good fruit-room should be spotlessly clean and free from all taint of mustiness.

THE ORCHID HOUSES.

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

Oncidium Claesii.—At Burford plants of the new and recently imported Oncidium Claesii are tied perpendicularly to strong teak stakes, the base of the stems being fixed firmly with crocks in pots of a suitable size, provided with a layer of peat and living sphagnum-moss over the drainage. The plants are staged at the coolest end of the Odontoglossum house, where they are syringed overhead several times a day. New growths are starting, and the plants appear to be responding well to the treatment afforded them. It is stated that this Oncidium belongs to the microchilum group, which includes such well-known species as O. macranthum, O. superbiens, O. serratum, &c., and the treatment generally afforded these plants should also prove suitable for O. Claesii.

Lælias.—Lælia anceps, L. albida, L. autumnalis, and L. Gouldiana are all making rapid growth, and they should therefore receive generous treatment. Afford each plant plenty of water whenever it is necessary. The structure in which they are growing should be freely ventilated during the warmest part of the day, and only a very thin shading will be necessary to protect the inmates from the full glare of the sun. The roof shadings should be removed early in the afternoon so that the sun may raise the temperature of the house to 90° or more. At the same time give the plants a good syringing overhead with clear water, and well damp the paths and parts beneath the staging, &c.; but on no account should the plants be syringed

on dull days, as the young growths sometimes rot through water lodging in them. When finishing preparations for the night, open the bottom ventilators, and those at the top a trifle, to allow any excess of moisture to escape. Allow the temperature of the structure to fall to 65° during the night time. Vanda teres will also thrive well in this house provided it be syringed thoroughly several times each day.

Plants of Miltonia Phalænopsis should be placed well up to the roof glass, under a shaded part if possible, but if this is not convenient, a sheet of tissue paper spread over them will answer the same purpose. Any plants of this Orchid that require more root room should be re-potted at once, as the young "breaks" are now pushing fresh roots. Afford plenty of drainage to the pots and use the ordinary Orchid compost as a potting medium, taking care to avoid over-potting. Give plenty of water at the roots until the new growths are completed.

Barkerias.—The pretty Barkeria spectabilis is now in bloom here in the Mexican house, where it is suspended close up to the roof glass, a position which suits this plant admirably. Such varieties as B. Lindleyana, B. cyclotella, B. Skinneri, and B. melanocaulon are also worthy of attention, the flowers lasting for a long time during autumn and winter. These plants are now commencing to grow, and should be re-potted. Turn them out of the old compost and thoroughly wash the stems and old roots with some safe insecticide. They should also be thoroughly examined for mealy bug, which, if not eradicated, will give considerable trouble all through the growing season. Let the plants be grown in pots that have wire handles attached so that they can be suspended. A compost of sphagnum-moss and leaf soil, with which are incorporated a few small crocks and some silver-sand, will suit their requirements.

Platyclinis.—Such species as P. glumacea, P. Cobbiana, and P. uncata, although coming from the Philippine Islands, thrive well if suspended from the roof of the intermediate house. Afford them less water at the root from the present time until growth re-commences. Syringe them daily on the under sides of the leaves, and sponge them occasionally. In the same house, P. filiformis is now in full growth and showing its flower spikes; the plant will require abundance of water at the roots and copious syringings overhead until the flowers commence to open, but no longer.

Lælia pumila and its varieties are now starting to grow, and may be repotted if necessary. Grow them in shallow Orchid pans, with only a small quantity of compost, which should consist of peat, leaf soil, sphagnum-moss, some small crocks, and coarse silver sand. Suspend these plants in a cool part of the intermediate house, and keep the surface of the potting material just moist until the flowers appear in the young breaks, when the quantity should be increased until growth is completed. There are several distinct varieties of this species, as L. p. alba, L. p. delicatissima, L. p. Gatton Park variety, L. p. Low's variety, L. p. E. Ashworth's variety, &c., all of which should be obtained if possible. The flowers which are produced during October and November are sure to be appreciated, especially where flowers are required for buttonholes.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Souvenir de la Malmaison Carnations.—Select the more vigorous plants as they pass out of flower for immediate layering, for the earlier this is done the better chance will the young plants have of becoming rooted before the winter. If space can be afforded in frames in which early Potatos have been growing, little more will be required than to add a liberal addition of course sand with fine charcoal siftings to the soil in which the Potatos have been grown. The old plants, after being thoroughly watered, should be turned out of their pots and be planted into the prepared soil in the frame to such a depth that the shoots are conveniently low enough to be tongued in the usual manner. Secure each layer as the work proceeds with a strong peg or layering pin, and when the layering is finished afford water through a fine rose, after which place the lights on the frame and provide shade from bright sunshine. In the course of a week or so from the time of layering the lights may be removed on fine nights. Give a gentle spraying of clear water in the morning, after which replace the lights and take every precaution to prevent heavy rains from saturating the soil.

Cyclamens.—These plants, being well advanced, should now be placed in their flowering pots, using a compost of loam, good leaf-soil, dry cow manure, sand, and a little finely-sifted lime rubble; press the soil firm about the corms. Place the plants close to the glass in pits or in frames, in which a night temperature of 60° can be maintained. Afford shade, and maintain a humid atmosphere by frequently spraying the walls and the surroundings about the plants; and not forgetting to give light fumigations occasionally in order to keep the plants free from insect pests.

Re-arranging Plants in the houses.—Most kinds of hard-wooded plants will now have been removed out-of-doors, therefore their place in the conservatory, greenhouse, or corridor must be filled with other decorative plants. By grouping the different subjects together in their respective colours a better effect is produced. An abundance of material is offered for the purpose, and with a selection of plants from the intermediate house or stove (many of which will remain in flower for some time in the cooler structures), the conservatory can be made very attractive. Small groups of Streptocarpus set in a groundwork of Adiantum Ferns, an adjoining group of Schizanthus, with others of Gladiolus delicatissimus and its varieties; Anthurium Scherzerianum also set in Fern. Bougainvillea (Coker Court variety grown in small pots) make pretty groups of distinct colour. Acalypha musaica with spikes of Francoa ramosa interspersed have a charming effect. Begonias, Petunias, Abutilons, Chromas, Carnations, Cannas, and Celosias, all combine in making the conservatory and plant-houses attractive during the next few months.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

The Delphinium.—At the present time there is no plant in the herbaceous border of hardy herbaceous plants more effective than the Delphinium, whether it be the annual or perennial varieties, though the tall hybrids of the latter are especially so. The great difference in their height, ranging as they do from 1 foot to 10 feet high, and their variety of colours from pure white to scarlet, and every shade of blue from bright lavender to deep indigo, make them splendid subjects for using in many ways, either in masses or groups of distinct colours, or as single border plants in combination with other plants. The effects of these combinations are sometimes very beautiful, and now that the Delphiniums are in flower it is a good time to make observations and to think of fresh effects that may be obtained from them next summer. Their cultivation is very simple, as they are perfectly hardy, and thrive in the most ordinary soil, provided it has been previously well manured and deeply dug. Seed sown now of the perennial sorts will supply flowering plants for next year, but if there are certain colours which it is desired to retain distinct the best plan is to propagate by dividing the stock of the particular plant, either in the autumn when the year's growths have ripened off, or in the spring just as the plants are starting into growth. It is advisable, too, to lift the perennial plants every three or four years, and trench the ground, and manure it thoroughly before replanting. This is best done in the autumn. Like a good many other flowering plants, if the flowering stems are cut away when the flowers fade, it encourages a second display later in the season. The annual varieties should always be sown where they are intended to flower, and thinned out when the seedlings are large enough to handle. If sown in boxes, and afterwards planted out, they are not nearly so successful. Amongst the species Delphinium nudicaule is a most desirable dwarf, compact, little perennial, about 12 inches to 15 inches in height, with light scarlet flowers, and is very easily raised from seed. On a light dry border it comes into flower very early, and lasts for a long time. It is most effective if grown in small groups. D. cardinale is another scarlet-flowering one, but is much larger growing. D. formosum, and its varieties belladonna and lilacinum are very effective, and worthy of a place in any border. D. azureum is another beautiful flowering plant with particularly large, sky-blue blooms. D. cashmirianum is one of the dwarf species and of a distinct pale blue colour, and well worth growing. D. Zalil, which has long spikes of beautiful clear yellow flowers, attaining 3 feet or more in height, an annual, is very pretty, while Queen of the Blues, and Porcelain Blue, which has already been referred to in a previous note, should be in every collection because of its charming colour.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hadley Park, Bedfordshire.

Figs.—Trees that are growing in permanent borders will furnish a second crop of fruits, providing they are in a healthy condition and free from red spider. Where the first crop has been gathered, the trees should be vigorously syringed both morning and afternoon, and should any insect pests be present they should be syringed two or three times in succession with Gishurst Compound well diluted with soft water. Growing shoots should be stopped at two or three nodes above the fruits, and any weak sprays or suckers that are not required should be removed. The second crop generally produces more fruits than the tree can perfect; not more than three should be allowed to each shoot. If the old mulching material is exhausted, a little more consisting of loam, decayed cow manure, and bone meal should be applied. Furnish the roots with plenty of liquid manure, and endeavour to maintain a moist atmosphere in the house while the fruits are swelling. If the figs are to be sent long distances, it is important to gather them before they become too soft, or they will probably become bruised in transit.

Pot Figs.—It is a good plan to have a number of these plants in pots, for they can be forced or retarded as the grower wishes. If there is an unlimited amount of room in the fruit forcing departments, they can be arranged in batches to furnish successional crops. Negro Largo, Osborne's Prolific, and St. John are three good varieties for growing in large pots. The first-named must be severely restricted in root space, for it is a very strong grower, and will, if the root-run is not kept within bounds, produce large sappy growths and practically no fruit. This variety should certainly find a place where pot figs are grown. The fruits attain a good size, and they are of excellent flavour when properly finished.

Lady's Seedling Grape.—If the bunches of this variety are in course of ripening, and the foliage around them is at all dense, a few of the largest leaves should be tied back to admit the air and sunshine which will give additional colour to the berries. Give an abundance of clear water to the roots of vines whose fruits are commencing to colour, and allow plenty of warm air to circulate freely through the house. Keep a sharp look-out for thrip and red spider, and sponge the leaves on the first appearance of either of these pests.

THE APIARY.

By CHLORIS.

Honey Dew.—Honey dew, instead of being such a blessing as the old skeppists imagined it to be, is a great curse to bee-masters. In some parts it is almost impossible to obtain a section free from honey dew.

What Honey Dew is.—The substance is produced by an aphis which secretes honey dew and sprays it over the leaves, and sometimes such quantities are produced that it falls from the upper leaves to the lower portions of the trees. This sugary moisture attracts the bees and wasps, during a lull in the honey flow, and it is gathered and stored by the bees. These aphides secrete honey dew, it would seem, as a measure of self-protection. In the natural course of events the insects would be destroyed by birds, but the bees and wasps, desiring the sweet product, drive the birds away.

What it looks like.—If a shallow frame or section be held before a strong light, honey dew looks inky, or, perhaps a better way of describing it would be to say it has a smoky appearance. When tasted it certainly has a smoky flavour. Never, under any circumstances, offer for sale honey contaminated with this horrid stuff.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR JULY.

SATURDAY,	July 7	Soc. Franç. d' Hort. de Londres meet. German Gardeners' Soc. meet.
TUESDAY,	July 10	Roy. Hort. Soc. Summer Exhibition at Holland House, Kensington (2 days). Wolverhampton Floral Fête (3 days).
WEDNESDAY,	July 11	Nottingham Hort. Sh. (2 days). Hereford and W. of England Rose Sh. Helensburgh (Scotland) Rose Sh.
THURSDAY,	July 12	Woodbridge Flower Sh. Bath Rose and Begonia Sh. Potters Bar and Dist. Rose Sh. Manchester & North of England Orchid Soc. meet. Weybridge & Dist. Fl. Sh.
FRIDAY,	July 13	Sweet Pea Sh. in the Exhibition Grounds, Garryowen, Limerick (2 days).
SATURDAY,	July 14	Glasgow Fair. Dutch Gardeners' Soc. meet.
TUESDAY,	July 17	Roy. Hort. Soc. Coms. meet. Roy. Scottish Arboricultural Soc. Exh. at Peebles (4 days).
WEDNESDAY,	July 18	Nat. Rose Soc. & Roy. Caledonian Hort. Soc. combined Exh. at Edinburgh. Glasgow Pansy Sh.
THURSDAY,	July 19	Newport Fl. Sh. Roehampton Cottage Fl. Sh. at Dover House. Dunfermline (Carnegie Trust) Fl. Sh. (2 days). Great Yarmouth Fl. Sh.
FRIDAY,	July 20	North Lonsdale (Ulverston) Rose and Sweet Pea Exh.
SATURDAY,	July 21	German Gard. Soc. meet.
TUESDAY,	July 24	Nat. Carnation & Picotee Soc. Sh. in Roy. Hort. Hall, Westminster.
WEDNESDAY,	July 25	Cardiff & County Hort. Soc. Exh. (2 days). Newcastle-upon-Tyne Fl. Sh. (3 days). Dingwall Fl. Sh. Ewell Cottage Gardeners' Sh.
THURSDAY,	July 26	Ulster Hort. Sh. (2 days). Bridgwater Fl. Sh. Scarborough Fl. Sh. (2 days).
FRIDAY,	July 27	Roy. Bot. Soc. meet.
SATURDAY,	July 28	Dutch Gard. Soc. meet. Peterston-super-Ely, Cardiff, Fl. Sh.
MONDAY,	July 30	Roy. Hort. Soc. Conversazione, 9 p.m.
TUESDAY,	July 31	Roy. Hort. Soc. International Conference on Plant Breeding (3 days). Llanelly Fl. Sh.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63·2°

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, July* 4 (6 P.M.): Max. 74°; Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, July* 5 (10 A.M.): Bar., 30·1, Temp., 69°, Weather—Fine.

PROVINCES.—*Wednesday, July* 4 (6 P.M.): Max. 70° Eastern Counties; Min. 51 Orkneys.

SALES.

WEDNESDAY, JULY 11th—

Special Sale of Orchids, comprising the "Hey House" collection, and 600 Established Orchids in variety. Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

The Transition in Agriculture.

We have heard it said, even within the walls of the R.H.S., that Horticulture is less progressive than Agriculture, and less disposed to profit by the teachings of Science. Considering the prosperity of horticulture and the depressed condition of agriculture generally, this has always appeared to us as being a very hard saying. No doubt the speaker, an eminent agriculturist, had some good reason for his statement, but beyond the fact that gardeners are often content to purchase artificial manures, weed-killers, insecticides, &c., at much higher prices than the up-to-date farmer would do, we cannot see much reason to exalt agriculture at the expense of horticulture, but rather the reverse. There can be no sort of doubt that as a rule the gardener gets a much larger output from the soil he cultivates than does the farmer, and whilst the latter is, not without reason, complaining of hard times, the former is, on the whole, progressing.

The farmer has not been able to adapt himself and his procedures to altered conditions. This is a misfortune for which, of course, he is not wholly responsible. Whether by co-operation, or the adoption of methods and practices found profitable in Denmark, in Holland, and other countries, or by amended land-laws, reduced taxes and lessened rates of transit, a remedy may be found, we do not propose now to enquire. That no one panacea that will operate at all times and under all conditions is likely to be forthcoming may be inferred from the failure of the fruit-crops for the last year or two—a failure, we regret to say, that bids fair to be repeated this season, though possibly not to so large an extent.

Fruit culture under glass is another matter, and under fruit culture we include not only that of Grapes and Peaches, but of Tomatos and Cucumbers. The enormous increase during the last few years of the area devoted to the production of these fruits is almost beyond belief, except to those whose business affords them an opportunity of realising it. These "fruits" have come to be almost a necessity, and whilst the bulk of the wheat and cereals we consume must, under any circumstances, be imported from abroad, we can, and do, supply the markets from our own resources with much of the produce alluded to. No doubt we could and should do much more in this way were it not that it is cheaper at certain seasons to buy from the foreigner or from our fellow-subjects across the sea than it is to grow it at home.

We have so far been speaking of "necessaries," or of what may be fairly considered as such. The culture of flowers for decorative purposes may be looked on as a luxury, though a harmless one. When one comes to consider not only the gratification given to the consumer and the benefits, moral and intellectual, he derives from the exercise of his taste, but also the enormous extent to which both the labourer and the capitalist are benefited by the culture of flowers, it becomes evident that the line between necessaries and so-called luxuries is by no means of the hard and fast description. The acres upon acres of glass now devoted to the cultivation of Roses, Carnations, Chrysanthemums, and other flowers represent, on the whole, a very large capital and a correspondingly large income to the cultivator and to those employed by him. Then, again, there are the great seed-farms, the collectively large areas devoted to the open-air cultivation of Daffodils and other market flowers, as well as of Strawberries and small fruits. These are all illustrative of the fact that while ordinary farm-culture has declined, garden-culture has largely increased. Some farmers have had enterprise enough to enter the ranks of market-gardeners and rose-growers. They are few in number, perhaps, but, as many of our readers know, they have been conspicuously successful.

To those who wish to learn more of the way in which gardening methods are replacing the old farming systems, we commend the perusal of Mr. Edwin Pratt's "Transition in Agriculture," published by John Murray. It is full of interesting and varied details, and written in so pleasant a style that its perusal is a very agreeable task.

FLOWER SHOW ARRANGEMENTS.—It is very unfortunate that two special societies should have arranged to hold their exhibitions on the same day. It is equally or more unfortunate that the promoters of these gatherings should not have considered the interests of the horticultural Press to which they are under such obligations. By selecting Thursday as the day on which to hold their exhibitions, they practically preclude the possibility of preparing an adequate report. Some of our contemporaries are published at an earlier date than we, and as for ourselves, while Rose-lovers are revelling in the exquisite colour and form of the Rose and the devotees of the Sweet Pea are feasting on the beauty and fragrance of their favourite flower, we shall be inhaling the perfume of printers' ink and be more or less stunned by the rattle and din of the printing machines. The invitation to avail ourselves of the amenities of the Club Room at the Botanic is rather ironical under the circumstances! We shall give a short notice of each show in this present issue.

A GREAT SUMMER SHOW AT HOLLAND HOUSE.—Readers may be reminded that by the kindness of MARY Countess of ILCHESTER the Royal Horticultural Society will hold an exhibition in the grounds at Holland House, Kensington, on Tuesday and Wednesday next, July 10 and 11. The show is organised on exactly the same lines as the Temple show, but catching a later series of plants in perfection. There will be also a special tent for sundries. This will be the fifth great summer show the society has held in succession, and hitherto every one of them has entailed a loss on the society's finances. The shows have been magnificent, but the attendance has never compensated for the outlay. The site of the show is very centrally situated, and is easily accessible from all parts of London. Holland House lies due west of Hyde Park and Kensington Gardens, and is within five minutes' walk of four railway stations. Visitors from the City and West End will find the Holland Park (Tube) Station, on the Central London Railway, very convenient. Those travelling from Kew, Ealing and the Western Suburbs will find the electrified District Railway a good route; or they can take a tram to Hammersmith Broadway, and thence an omnibus to the entrance gates. Note.—Kensington High Street is the nearest station on the Metropolitan and District Railways from Liverpool Street, King's Cross, St. Pancras, Euston, Paddington, Cannon Street, Charing Cross and Victoria. Addison Road is the nearest from Waterloo, Clapham Junction, Willesden and Richmond. Earl's Court is the nearest from Wimbledon, Putney, Fulham, Acton, Ealing, and Windsor. It is convenient to change at Earl's Court for Kensington High Street. All Hammersmith and Turnham Green omnibuses pass the gates, from

Liverpool Street, Bank, King's Cross, St. Pancras, Euston, Charing Cross and Hammersmith. The only entrance to the show will be by the Great Gate in Kensington High Street, and the only exit by the gate leading to Melbury Road, where carriages may be ordered to wait. An arrangement has also been made with the Royal Meteorological Society for an Exhibition of Meteorological Instruments, comprising rain-gauges, sunshine-recorders, barometers, thermometers, photographs illustrating meteorological phenomena, diagrams illustrating the influence of the weather upon garden and other crops, &c., and also a typical open-air Climatological Station in working order. Mr. WILLIAM MARRIOTT, the Assistant Secretary of the Royal Meteorological Society, will give a short address each day at 3.30 p.m. on "Meteorology in Relation to Gardening," and will explain the nature and working of the instruments shown.

THE GARDENING CHARITIES.—By the kindness of MARY Countess of ILCHESTER the beautiful gardens of Holland House will be open to visitors from two o'clock till seven on July 10 & 11, the occasion of the Royal Horticultural Society's Flower Show; admission 1s. each, the proceeds to be given to the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund.

FLOWERS IN SEASON.—Mr. R. LINDSAY, of Murrayfield, Midlothian, kindly sends us specimens in flower from the open garden of VERONICA LYCOPODIOIDES, a dwarf shrub from New Zealand, with erect branches, densely covered with small scale-like, decussate leaves, which might readily induce the observer to think he was dealing with a Cypress-like Conifer or a Lycopod. Microscopical investigation would, of course, soon dispel the illusion, and if, as in this case, the flowers were present, there could be no doubt as to the affinity of the plant. VERONICA HECTORI is very similar, but coarser in habit, and the leaves are rounder and less acuminate.

ABUTILON VITIFOLIUM, with its bluish lilac flowers, has been sent us from various places in the south this year; but this is the first time that we have seen it from so far north as the neighbourhood of Edinburgh. Mr. LINDSAY tells us his plant is hardy but is afforded the protection of a south wall.

ASTRAGALUS ALPINUS is rare enough in Britain, being confined, we believe, to the mountains of Clova (Forfar and South Aberdeen, Watson), but the white variety found on Ben Vrackie, in Perthshire, is still more rare. The specimen sent is from a seedling from the original plant.

MR. JOHN WRIGHT, V.M.H.—The *Agricultural Economist* for July contains an excellent likeness of this eminent gardener-journalist, whose works on pomology and fruit culture have secured for him a prominent place among the elect, and whose labours in the promotion of horticultural education in country districts give him a high place among the benefactors of the country.

THE BRUSSELS BOTANIC GARDEN. — The *Matin de Brussels* is now discussing a project for transferring the collections of the State Botanic Garden to the splendid park of Woluwe. The botanic garden would be kept, but the interior of the buildings would be transformed into a Kursaal, with concerts, refreshment rooms, &c., and other attractions. The projectors of the scheme propose to make at Woluwe a new Kew Gardens, which, as is stated, is the world's model for such institutions.

DRESDEN ORCHID SHOW.—We have received the schedule of the International Orchid Exhibition to be held at Dresden in May, 1907, and which comprises 49 classes for which good prizes are offered. Mr. OTTO BEYRODT, of Marienfelde, Berlin, who has taken the lead in most of the recent Orchid exhibitions in Germany, will give information on the subject of the show, and forward schedules to all who apply to him.

NEWLY-NAMED PLANTS. — A correspondent sends us the following note. A plant-seller in Farringdon Road, London, has the following notice hung on his stall:—"Sturgeons, 3d. doz.; Dayliars, 1d. each. All plants sold from this stall are warranted true to name." The Sturgeons are supposed to be what gardeners call Nasturtiums. But gardeners must not be in a hurry to throw stones, for they mean Tropæolum when they say Nasturtium, just as they mean Pelargonium when they say Geranium.

BRITISH FORESTRY.—Mr. HERBERT ROBERTS having asked in the House of Commons what steps have been taken to carry into effect the recommendation of the Department Committee of 1902 on British forestry, Sir E. STRACHEY says: 1. The Departmental Committee recommended that the Alice Holt Woods, in Hampshire, should be made available as soon as possible to serve as a demonstration area in England. This has been done, and the recommendations made by Dr. SCHLICH are being systematically carried out. A certain amount of experimental planting has already taken place. It was also recommended that a suitable estate should be purchased in Scotland to serve as another demonstration area. Two additional properties are now under consideration, and as soon as a suitable estate has been found the Treasury will be approached with a view to purchase. 2. The recommendation of the Departmental Committee that lecturers should be appointed at Oxford and Cambridge has to some extent been met by the augmentation of the salary of the Sibthorpian Professor of Rural Economy at Oxford (Dr. SOMERVILLE), who is now Professor of Forest Botany. It is understood that an estate will be placed at his disposal for demonstration purposes. 3. A sum of £500 a year, which was placed by the Treasury at the disposal of the Board for the establishment of lectureships in forestry, has been allocated to the University College of North Wales at Bangor and to the Armstrong College at Newcastle-on-Tyne. The results have been most encouraging, and there has been a constant demand on the part of landowners for expert advice from the lecturer. 4. A school for working woodmen has been established by the Commissioners of Woods and Forests in the Forest of Dean, and is now in the third year of its existence. 5. Legislation will be necessary to remove the inequality in the levy of the estate duty on timber. 6. The Railway Fires Act, which comes into force on January 1, 1908, will give some protection to owners of woods against loss by fire caused by sparks from locomotives. 7. Special inquiries were made in 1905, with a view to ascertaining the extent of land now occupied by woods in Great Britain, and the results have been published in the agricultural returns for that year. 8. With the object of ascertaining the districts in which local authorities have developed the catchment area of their water supplies by afforestation. The results of various enquiries were tabulated and published in the Journal of the Board of Agriculture for November, 1904. A leaflet on the relation of woods to domestic water supply was published in January, 1904, and a large number of copies have been issued.

Photo by J. Gregory.

FIG. 6.—MESSRS. PERKINS AND SONS' (COVENTRY) 1ST PRIZE EXHIBIT IN THE CLASS FOR A BRIDE'S BOUQUET AT THE R.H.S. SHOW HELD ON JUNE 20.

THE FLORA OF CHINA.—We have received the following letter from Mr. W. BOTTING HEMSLEY, F.R.S., keeper of the Herbarium, Royal Gardens, Kew:—"I believe that all who have read Mr. E. H. WILSON'S admirable series of articles on his last mission to China for Messrs. VEITCH & SONS, which have appeared in the *Gardeners' Chronicle*, and on which you made some comment in your last issue, will agree with you that a few words of appreciation and congratulation will not be out of place. Messrs. VEITCH may be congratulated on having selected a man, recommended by the authorities at Kew, who has so ably served them and science, and Mr. WILSON deserves the highest commendation for the very thorough manner in which he conducted his work. He might have been commercially successful, without troubling himself about the botany of China; but with Messrs. VEITCH'S financial support [and the additional outlay must have been very considerable] he must have devoted every minute of his waking hours to work. Having had exceptional opportunities of learning the extent and character of his operations in China, not only from his living and dried collections, but also from other travellers and residents in China, I have no hesitation in ranking him with DAVID DOUGLAS and JAMES DRUMMOND, whose labours in North America and West Australia respectively are so well illustrated in our gardens, herbaria and botanical records. Having also been associated with him in comparing some portions of his enormous dried collections, presented to Kew by Messrs. VEITCH, I was agreeably surprised at the highly critical botanical knowledge he displayed."

A FIRE-RESISTING TREE. — Mr. ROBERT THOMSON writes: "At the time of the vast conflagrations which have destroyed the great city of San Francisco, it has occurred to me that the following brief account of a fire-resisting tree will be interesting. This plant (Chaparro) is indigenous to the Republic of Colombia, with regard to which, I think, the only record of its peculiar merits is that which I have published. The London *Daily Telegraph* ten years ago (October 12, 1895) epitomized my report on the subject as follows: 'It is not often a student will turn to a Foreign Office report in expectation of finding aid to Biblical exegesis, but anyone who reads Number 370 of this year will perceive that the outward

and visible tokens of an unconsumed burning bush are not incompatible with the facts of nature. It has always been difficult to show how a plant could burn and yet not be consumed—a spectacle that so struck Moses that he called it "this great sight." It may be that the bush was like one of the stunted trees described in the Foreign Office report just mentioned known as the Chaparro, which resists fire for a very long time. The branches of it burn slowly, but the trunk is practically fireproof—indeed, it appears to be a vegetable salamander, and flourishes best in the midst of great prairie fires. If a long period elapses without a conflagration, the Chaparros pine away and even die, but the moment the flames burst out and roar and hiss among the vegetation, then the incombustible bushes begin to look bright and to flourish. Places reduced to sterility by incessant burnings are occupied by this diminutive tree, and assume the aspect of vast systematically formed and well kept parterres. ROBERT THOMSON, Halfway Tree, May 25, 1906."' The plant to which Mr. THOMSON refers is, as we learn from Mr. HOLMES, a species of Rhopala. Its fire-resisting property is due to the abundance of crystals of mineral matter which it contains in its bark.

ONE OF THE HEAVIEST RAINFALLS recorded in London for many years—over 2 inches in less than nine hours—began shortly after midnight on Thursday, June 28, and continued till about 9 a.m. on the following day. Extensive flooding occurred in various parts of the metropolitan area. The rain and floods were experienced over a wide area outside London. Two inches of rain means about nine gallons to every square yard or 202 tons to every acre.

CHRYSANTHEMUM "TOKIO."—A recent number of the *Revue Horticole* contains a coloured figure of a remarkable "Japanese" variety with long linear florets, the central ones being of a paler colour. The variety was obtained by Messrs. VILMORIN, ANDRIEUX & Co. in 1903. It has been cultivated in various manners. The florets are tubular in the beginning, but afterwards flatten out. The plate shows them of a violet colour, but in the text we are assured that this is an error arising from some accident during printing, and that the true colour is delicate rose. M. PHILIPPE DE VILMORIN adds that it is one of the easiest varieties to cultivate and that it succeeds in the open air without any special care.

THE ABERDEEN AND NORTH OF SCOTLAND COLLEGE OF AGRICULTURE.—The governors of this college have just issued their prospectus for 1906-07. It extends to 50 pages. The prospectus states that a lecturer in forestry will be appointed to provide instruction in that subject, and to organise short courses of instruction for working foresters who cannot spare the time for a longer course. A forest garden or demonstration area is to be provided in connection with the forestry department. This will contain specimens of forest trees and demonstration-plots, showing methods of propagating, planting, and cropping. A new departure is a course of lectures to be given in districts desiring information on horticultural subjects. These will deal with garden plants: the duties performed by root, stem and leaf; the soil, its constitution in relation to plant life, the working of the soil, gardening implements and fertilisers; vegetables: the origin, uses and methods of cultivation of well-known sorts; fruits: their origin, uses, and cultivation, methods of pruning and training; methods and principles of budding and grafting; herbaceous, annual, and other flowering plants; greenhouse and room plants; the propagation of plants by division, layers, cuttings, &c.; the improvement of garden plants by selection and crossing; the ailments of garden plants, methods of prevention and cure. Altogether the prospectus provides for a wide and liberal course of instruction admirably suited to carry out the main object of the college—the development in the North of Scotland of education and research in agriculture, horticulture, forestry, and allied subjects.

THE ROYAL BOTANIC.—We have received sundry documents relating to the affairs of this society. Horticulturists of all grades are lamenting the unfortunate condition in which the society is now placed. With a vivid remembrance of a similar crisis in the affairs of another society, of the manner in which it was extricated, and of the eminently successful manner in which it is now carried on, we can only hope that the "Botanic" will decide on a policy which will justify its name, enable it to carry out the objects for which it was founded, and make it representative rather than exclusive. It must be remembered that even in the darkest hours of the Royal Horticultural Society much was done for horticulture, in spite of the attempts to turn the garden at South Kensington into a tea-garden, for the benefit of the residents in the neighbourhood.

MR. W. SMITH, who is leaving Oxenfoord Castle, after having had care of the gardens there for the past 23 years, was recently presented by his friends and neighbours, at the Stair Arms Hotel, with a gold watch chain and pendant, Mrs. SMITH being also given a gold bracelet. Expressions of regret on Mr SMITH leaving Oxenford Castle were voiced and he was wished every success in his new appointment at Lambton Castle, Durham.

SCOTTISH HORTICULTURAL ASSOCIATION.—This association held its annual outing on Saturday, June 30, a visit being paid to Floors Castle, Kelso. The company, which numbered 75, was favoured with fine weather. They were conducted over the gardens and grounds by Mr. STREET, head gardener to His Grace the Duke of ROXBURGHE. Those famous gardens were greatly admired, an especial feature of interest being the magnificent lawns. The crops of Figs were remarkably fine, especially of the variety Brown Turkey. Carnations are also well grown in these gardens both under glass and out of doors.

UNSEASONABLE FLOWERING. We frequently see instances of this in the Horse Chestnut arising from different circumstances, but we do not remember to have noticed it in the Lime. Several trees planted in a London suburb by the side of the roadway some 20 or 30 years since are now full of bloom, whilst their companions are showing rapidly ripening fruits. As all the trees are growing under apparently similar conditions, and are of about the same age, there must be some individual peculiarities to account for the difference. While speaking of the Lime may we point out to intending planters that the Lime is one of the most unsuitable trees for planting in or near large towns?

THE NATIONAL CHRYSANTHEMUM SOCIETY'S OUTING will take place on Monday, July 23, when a visit will be paid to Dorking. By kind permission of Her Grace LILY Duchess of MARLBOROUGH members will inspect the gardens at Deepdene, and later a visit will be made to Broom Hall, by permission of Sir ALEX. HARGREAVES BROWN. Particulars may be obtained from the secretary, Mr. RICHARD A. WITTY, St. James' Villa, Swains Lane, Highgate, N.

LIBERAL PRIZE FOR A NEW ROSE.—Prizes of the value of £150 for new plants or flowers are uncommon, and deserve to be recorded. A prize of this amount (3,000 marks) was offered at the recent exhibition of the German Rose Society (Verein Deutscher Rosenfreunde), held at M. Gladbach, June 29-July 2, for the best seedling Rose of German origin not yet in commerce, the donor being the *Praktischer Ratgeber*, a weekly horticultural journal published at Frankfort-on-the-Oder. A committee of five of the judges of the exhibition was appointed to make the award, and from the several seedlings entered they finally selected a rose-coloured Hybrid tea, which appeared from the blooms staged to be an improvement on both Caroline Testout and La France, and the seedling will receive the prize, subject to its habit of growth in the grounds of the raiser satisfying the judges, and on condition also of the production of good flowers fit for being exhibited in the autumn of the present year, in order to prove its autumn-blooming qualities. The raiser of the seedling in question is Mr. H. KIESE, of Erfurt, and one condition of the prize is that the Rose shall bear the name "Otto von Bismarck."

Publications Received.—*Transactions of the Royal Scottish Arboricultural Society*. Vol. xix., Part 2. The contents include papers on the Possibility of Artificial Manures in Forestry, Planting Wasteland for Profit, Protection of Young Spruce from Frost, and many articles on kindred subjects.—*Bird Notes and News*. Vol. ii., No. 2. Pleads the cause of birds and the need for their intelligent protection.—*Agricultural Journal of the Cape of Good Hope*. June. Leading features: Extra-tropical Forestry (continued), by D. E. Hutchins, Tobacco Wilt in Kat River Valley (illustrated), Culture of Chicory, and Export Fruit Trade.—From the New Zealand Department of Agriculture, Divisions of Biology and Horticulture we note the following Bulletins: No. 7, Potato Diseases, by T. W. Kirk; No. 8, Nitrogen—fixing Bacteria, by T. W. Kirk; No. 9, Meteorology in Relation to Farming, by Rev. D. C. Bates; No. 10, Canker of Fruit Trees, by T. W. Kirk and A. H. Cockayne; No. 11, Club Root of Cabbage, by T. W. Kirk and A. H. Cockayne; No. 12, Hollyhock Rust, by T. W. Kirk and A. H. Cockayne; No. 13, Gum-tree Scale, by T. W. Kirk; No. 14, Disease of Swede Turnip, and No. 15, Bean Diseases, both by T. W. Kirk.—Also the Thirteenth Report of the Divisions. Excellent work has been done under the greatest disadvantages caused by removal of the offices and laboratories, and Messrs. Kirk and Cockayne and their assistants have devoted much private time in endeavouring to cope with the situation—From the same source we note Technical Paper, No. 1. A. The Facultative Saprophytism of Alternaria Solani, by A. H. Cockayne, and B, On Termites, by Captain T. Broun.—Michigan State Agricultural Experiment Station. Report of the South Haven Sub-Station for 1905. By L. R. Taft and T. A. Farrand. Successful work is chronicled, chiefly in connection with fruit-growing.—*The Garden City*, June. —*West Indian Bulletin*, Vol. VII., No. 1. This contains a report of the agricultural industries of Montserrat, papers dealing with Cotton and Rubber, and with the sources of the nitrogen of vegetation.—*Insect Pests of the Farm and Garden*, F. Martin Duncan (Swan, Sonnenschein & Co.)—*Irish Gardening*—*Fruit Culture Charts* (W. H. & L. Collingridge). —*La Tribune Horticole*.—*Nos Arbres, Correvon* (Geneva Atar).

NEW SWEET PEAS.

NOTHING is more marvellous in the history of horticulture than the evolution of the Sweet Pea, which has only been equalled by that of the Chrysanthemum. [Surely the development of the Begonias is, morphologically, even more remarkable than either?—ED.] This gradual development of its floral capabilities was doubtless largely owing to the genius of the late Mr. Henry Eckford, whose long-promised reminiscences, regarding which he wrote to me some years before his death, I trust may yet appear. At his request, I wrote at that time an "Appreciation" of the Sweet Pea, to appear in the same volume. His son, Mr. John Stainer Eckford, has already given us two varieties of commanding beauty, viz., Queen Alexandra and Henry Eckford. The former is a flower of splendid texture, a vigorous grower, and unquestionably the deepest pure scarlet self that has appeared. It is in many respects a great advance on the Scarlet Gem, which it may, not improbably, entirely supersede. Unlike its famous predecessor, it does not require to be grown in the shade. Its exquisite contemporary, Henry Eckford, is worthy of the world-famous name which it bears, and that, in the light of the Eckfordian creations,

is saying much. Its flowers, which are large and of splendid substance, are of a beautiful shade of rich salmon-orange, and will doubtless be highly artistic in their effect. In my own garden I have planted it in harmonious association with Queen Alexandra, Sadie Burpee, and Duchess of Sutherland; so it will doubtless be seen to great advantage with such a fine environment.

Mr. Lester Morse, the great American hybridist, who has given to the world many interesting varieties, recently sent to me from San Francisco, just before the conflagration, a most attractive classification of modern Sweet Peas, in which my own Eckfordian namesake, among many others, has the honour of being described. The characterisations are for the most part distinctive and expressive. Mr. Lester Morse has also forwarded to me his famous varieties raised by himself, viz., Helen Pierce and Shasta, of which the former resembles in its unique colour a blue mottled Gloxinia, the background being white; while the latter may be described as an improved Emily Henderson. The great American rival of Mr. Morse is Mr. Wm. Atlee Burpee, of Philadelphia. One of his latest and finest productions is entitled Burpee's Earliest White, which, judging from its reception at the hands of competent cultivators, is likely to prove a considerable acquisition. Navy Blue, I presume, was raised by Mr. Burpee. If so, he must rejoice in its continued popularity, though like many susceptible varieties, it has its limitations.

Among recent introductions of British origination, what may be termed the Countess Spencer types or hybrids (?) have a distinguished place. These, with their exquisitely varying shades of delicate pink, could not easily be surpassed. They are at present receiving great prominence in America, where they are described, not inexpressively, as "orchid-flowered types." Gladys Unwin and Florence Spencer are among the most graceful and attractive of these.

As the gratifying result of cross-breeding, we have now an almost incomparable scarlet Sweet Pea, Queen Alexandra; an orange variety of most refined beauty, Henry Eckford; a pure white surpassing Sadie Burpee, at least in dimensions, Dorothy Eckford; several blues, mauves, and dark purples of great distinction and numerous lovely roseate emanations, each more effective than its predecessor, from Prima Donna and Countess Spencer. What we earnestly desire and confidently anticipate is a decisive yellow, of more emphatic colour than the Hon. Mrs. Kenyon, like that which is discoverable in certain Tea Roses of considerably deeper than pale primrose hue, notably in the beautiful Perle des Jardins. *David R. Williamson.*

ODONTOGLOSSUM QUEEN ALEXANDRA, VARIETY "CARMEN."

OUR illustration (fig. 7) represents a flower of this fine hybrid Odontoglossum obtained by crossing O. Harryanum and a fine form of O triumphans, and for which De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), secured an Award of Merit at the Royal Horticultural Society, June 26. Several forms of the cross have been previously shown, but the variety Carmen was by far the largest and finest in colour-features which have no doubt been developed considerably by cultivation at Rosefield, where Odontoglossums are the speciality and their culture is scientifically and satisfactorily carried out. The sepals and petals of Carmen have a clear yellow ground colour, but the greater part of the surface is taken up by dark chestnut-red blotches. The lip is white. The basal half around the yellowish crest is beautifully marked with deep violet colour.

NURSERY NOTES.

MR. L. R. RUSSELL'S.

In the Richmond Nursery, which is comparatively new, the glass department is largely devoted to the cultivation of choice foliage plants. It would be difficult to find a better stock of Aralia elegantissima, A. Veitchi, A. gracillima, and A. leptophylla than is seen here. All are well furnished with foliage and are in perfect health, the plants being of various sizes from those recently grafted to others 2 feet to 3 feet high. Cordylines (Dracænas) are also well cultivated, and include many choice sorts, such as Jamesi, The Queen, Rose Laing, Duchess of York, Alex. Laing, and Superba. The plants are perfect specimens for table decorations. A nice batch of Acalyphas was seen. Caladiums are another feature in this nursery, the varieties Rio de Janeiro, Le nain Rouge, Mrs. Luther, Lady Stafford Northcote, Mikado, Her Majesty, and many others being especially good. Nice specimens of Codiæums (Crotons) are seen, and they include a fine stock of Aigburth Gem, Golden Ring, Elvira, Mars, Mutabilis, Harry Green, and Reedi, with many more of the better sorts. Heliconia illustris is grown in larger quantities than is usually seen. Anthurium crystallinum was noticed in good health and vigour, while A. Warocqueanum and other kinds grown for their foliage are also well done. A. Veitchi should be especially mentioned. Marantas are another feature, and the stock includes all the better sorts, such as Sanderiana, argentea, Veitchi, metallica, zebrina, and others. It is evident that the propagation of these plants is well understood in these nurseries, as is shown by the healthy stock of young plants. With all foliage plants much depends upon the propagator and the material used, and it is evident that in Mr. Russell's nursery that these facts are recognised. Alpinia Sanderiana, seen in a large batch of useful sized plants, showed its superiority over A. vittata, which was growing under the same conditions. Anoectochilus, of the most beautiful leaved varieties, including Madame A. Bleu, Sanderæ, Comte de Kerchove, and others; Sonerillas; Phyllanthus nivosus—small plants with beautifully coloured foliage—are all worthy of note. Other choice foliage plants are equally well grown, all the houses being well filled with useful stock.

Much of the nursery outside is devoted to the cultivation of Euonymus and other hardy foliage plants. Tree Ivies, of which large quantities are grown as standards, are a great feature. The varieties Arborea aurea, Silver Queen, elegantissima, and others were very fine. Silver Queen is a favourite for growing as a dwarf pot plant. Of deciduous trees, Japanese Maples, Cornus Spathi aurea, Quercus concordia, Ulmus punctata variegata, and Dimorphanthus mandschuricus variegatus are grown in large quantities. The Golden Privet and several of the choicer Ligustrums are also extensively planted, L. japonicum variegatum being specially worthy of note.

The branch establishment at Isleworth is largely utilised for propagating stock for the other branch nurseries. Several houses were filled with Aucuba vera; these had just passed their flowering stage and they showed promise for a splendid crop of berries. As growers of this plant, the firm has been noted for some years. Eurya latifolia is grown in large quantities, and the stock was remarkably clean and healthy. Elæagnus, in about ten distinct sorts, including E. glabra, E. præstans, E. aureus, E. macrophyllus (the silver leaf) are extensively propagated. Of Bamboos is seen quite a large collection, Arundinaria falcata being a special favourite. Azara integrifolia variegata was very pretty. Ulex hispanica, in pots, was very bright with its flowers. Climbers are extensively grown, and young plants of Clematis occupy several houses. It was of interest to note that many of these plants are propagated from cuttings, of which large batches are already rooted, and they were looking very promising. Vitis Coignetiæ, V. Thompsoni, and V. dissectum are all plentifully grown. Stock plants of many choice subjects

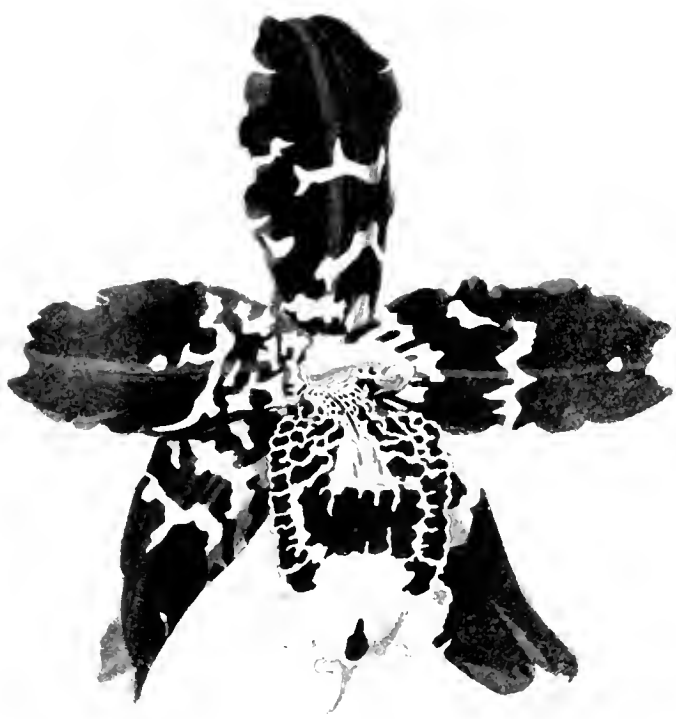


FIG. 7.—ODONTOGLOSSUM QUEEN ALEXANDRA, VARIETY "CARMEN."

were flowering against the walls. Ribes speciosum has been a mass of flowers. Olearia stellulata and O. Gunni were also beautifully in flower, with Ceanothus dentata, C. Gloire de Versailles, and C. Veitchiana. Solanum jasminoides is found to be hardy in these nurseries, and it flowers well in the open against a wall. Cotoneaster horizontalis was covered with its pretty berries.

Several glasshouses that are used for the culture of half-hardy plants during the winter are now filled with climbing Roses, of useful sorts, including the new varieties of Ramblers, hybrid Teas, &c. The Roses were well advanced in growth, and they will be placed in the open at an early period to ensure well-ripened growths. The new growths of the Ivies and Euonymus had suffered considerably from the late frosts, but they were fast recovering at the time of my visit on June 7. *A. H.*

WILD FLOWERS FOR CUTTING.

GARDENERS, as a body, do not always appreciate the value of wild flowers for cutting. Yet, if carefully selected, they are as pleasing as the usual run of border flowers, and, by those whose knowledge of plants is not extensive, some of them might probably be regarded as offerings from the mixed border. One might recommend the use of wild flowers in a cut state on account of its preventing, to some extent, the indiscriminate use of garden-flowers for the purpose. But even in the case of the first-named it is possible to overstep the limits of neighbourliness when rare blooms are gathered for one's own gratification merely. Children ought to be taught to appreciate and preserve our native wild flowers as well as our own wild birds. The little ones invariably rush for the first flowers of spring, but if it is pointed out to them that they are depriving others of the pleasure of seeing that which, on account of its scarcity, is in effect a rare blossom, the tendency to gather flowers thoughtlessly is checked. I have made it a point to always check my own children from gathering wild flowers when only a few were in bloom, because the next passer-by would be the loser. Trippers from town are frequently to blame for gathering rare flowers, but once let them fully comprehend that the impulsive gratification of a momentary whim will result in the deprivation of those who follow in their steps of much pleasure, it will surely have a tendency to check the custom of picking, only to throw away, all kinds of flowers and vegetable greenery. But, apart from the thoughtless destruction of wild flowers, there is no good reason why they should not be used, and used extensively. Some of them—Primroses, Bluebells, and others—cherished for long centuries, have always been picked. Besides these, there is a large number that are every whit as desirable as the majority of garden flowers, and some afford a variety of tint and form that does not exist in the latter. Care in the selection of flowers is, of course, essential. In general, those which are the produce of dry, impoverished soil are unsuitable, because they last only a short time in a cut state. Nor is it proper to gather wild flowers at any time of the day. Early in the morning or in the evening when the dew is falling are the best times to cull wildings, and the stems should be placed in water directly home is reached. A limited number of kinds is best cut in the bud. Poppies and Globe flowers, for instance, and Foxgloves, with, perhaps, only the lowermost bloom expanded. One has, of course, to be satisfied with such flowers as are only found in the locality, but sometimes a walk of a few miles brings one to a flora quite distinct from that of one's own neighbourhood, and not a few plants localise themselves in certain spots, and there alone is it of any use to look for them. Some people like flowers which others dislike. Sweet Cicely is one such, and there are others which association condemns—Dock, for instance.

Distinct types are to be had among wild flowers, such as the Umbelliferæ, some of the members of which are not only pretty, but, once used, become indispensable. How bold and handsome is the Cow Parsley! How light and graceful the Hedge Parsley! Good, too, for mixing with other flowers is the Earth-nut, and how charming are the old stems and heads of the Wild Carrot!

The Compositæ include many well-known and much-liked flowers, the Corn Marigold and Horse Gowan being too well known to need commendation. I like the soft yellow Leopard's-bane, and send quantities of it to London every year during the season. Some folks may object to the Tansy, but when cut with stems 4 or 5 feet in length it forms a handsome addition to the flowers of autumn. Nor must we forget that its scent, which is so generally disliked, is apparent only when the leaves or flowers are handled. I have also an appreciation for the Goat's Beard, perhaps as much on account of the foliage as the flower, and for Hieracium aurantiacum, sometimes as bright as a Pelargonium, and H. Pilosella. What a beautiful plant, too, is the Wild Succory, but, unfortunately, not common. Then in Pyrethrum and Matricaria other good things are found, while Centaurea provides the well-known Blue Bottle and C. nigra, the dried stems and flower-receptacles of which are so pretty in winter. Scabiosa succisa, especially the white form, is worth noting, while the Red Milfoil and Double Sneezewort are garden flowers rather than weeds; and I have no objection to Crosswort. In Teasel we have handsome and effective materials for decoration, and if it were not so common I would place beside it the Burdock, or, at least, the strong, vigorous stems of it. Vervain is useful for the same purpose as these, providing a setting to bulky flowers. For the same purpose the flags of Wild Iris should not be overlooked, nor the long blade of Reed Grasses, the Rushes, and the large Horsetails and Docks in seeds in autumn.

A few species of wild flowers provide good blue colour. Succory has already been mentioned. There are, too, the deep blue Bugloss, Forget-Me-Not, and the Wood Myosotis, Rampion, Bluebells (Scilla and Campanula), and Bellflowers and Horned Rampion. Rampion, Bluebottles, and Fennel make a pretty and simple combination. It is only of late years that the flaunting Poppy has come to be regarded with approval as a flower for picking. Mingled with Oats or Wheat it is lovely, and, if cut just previous to expansion, and the stems placed in water without delay, it will last for quite a week in a cool apartment. The Toadflax and Corkle and the light Bluebottle, along with just a few Poppies, make a charming arrangement. The Periwinkle is another most useful plant, though one can hardly term it wild. I prefer the large Periwinkle, with its bold, expanding shoots and shining leaves, to the creeping, smaller one. Of yellow wild flowers, the glowing Marsh Marigold is probably the finest of all. Ranunculus acris and R. lingua are also effective, and the Globe Flower must not be overlooked, its foliage, as well as its "lockit" cups, being pretty. Valerians, though rather fugacious, are distinct and good, and those who have the pretty Pink Valeriana pyrenaica in their neighbourhood possess a gem. Of Orchids, the best are Orchis maculata in its varied forms, O. latifolia, and Habenaria Conopsea.

I have not touched on the wealth of beauty we possess in our indigenous woody vegetation. The Sloe, Cherry, Crab, Wild Plum, Berried Elder, Barberry, Euonymus, the young foliage of Oak and Birch, the surpassing beauty of some of the Willows, the dainty catkins of the Hazel, the Honeysuckle, the Wild Roses, Raspberry, Bramble, Wild Clematis need only to be named to impress on our minds the delights of our own country and the unlimited means within our reach for rendering our homes sweet with flowers and cool with foliage. *R. P. Brotherston.*

[We confess we look with apprehension on our correspondent's proposal. With very few exceptions, our wildings never look "at home" anywhere but in their natural surroundings, and for decorative purposes are mostly less suitable than garden productions grown for the purpose. The indiscriminate and wholesale gathering of our wild flowers, especially of the rarer ones, should be condemned, for it prevents the production of seeds. To give a money value to such plants is to lead to their extermination. Even now there is scarcely a Primrose to be seen within a dozen miles of London.—ED.].

KEW NOTES.

OXALIS ADENOPHYLLA.

THIS new and rare species is now in flower in the Alpine House at Kew. It forms a charming companion to the beautiful Falkland Island species, O. enneaphylla, resembling it to a certain extent, especially in the foliage, which is hardly distinguishable. The chief point of difference lies in the rootstock, which in O. adenophylla is large and bulb-like and clothed with matted fibres, while in O. enneaphylla the rootstock is rhizomatous. The rosy purple flowers have deeper coloured veins with a deep crimson centre, and are produced in pairs or threes on each stem, instead of singly as in the Falkland Islands species. O. adenophylla was found by Mr. H. J. Elwes in Chili in 1902, on the tops of mountain ranges near San Martin, at an elevation of 6,000 to 7,000 feet, growing by rivulets above the timber line. He presented plants to Kew, and they flowered in the spring of 1905, when it was drawn and afterwards figured in the *Botanical Magazine*, t. 8054. So far the plants have been grown in pans in a cold frame, but it is apparently as hardy as the other, and will probably succeed under the same conditions in a moist, shady place on the north side of a large block of stone. Although the plants have not produced seeds they have been increased by division, so that there will soon be enough to make a group in the rock garden. The individual flowers do not last long, but are produced freely in succession for a considerable time. *W. I., June 30.*

TREES AND SHRUBS.

JUNIPERUS CEDRUS.

FOR the last few years I have been much annoyed at the want of success I have experienced in raising plants from the "bays" (berries) of this remarkable and nearly extinct tree of our flora. Those to whom I sent seed have until now been equally unsuccessful, and Mr. Raffill reported last March from the Temperate House, Kew, that none of the seeds sent by me had germinated. At last I have found out a very simple way which has answered very well, and that is to soak them for a long time in water. I extracted the two or three very hard seeds contained in the berry and put them into ordinary water for fifteen and thirty days respectively at a temperature of about 70° Fahr. In about six weeks after sowing, seedlings were noticed in both lots.

Now that I have succeeded in raising plants easily from seed, and that at Kew Mr. Rathll

has reproduced this very rare tree also quite easily from cuttings, no difficulty ought to exist in propagating this valuable species in different parts of the world. It is said to be the quickest growing of all Junipers, and its scented timber, not unlike that of Juniperus Bermudiana, is reputed imperishable. Dr. Carl Bolle saw trees in the heights of the island of Palma (Canary Islands) which he estimated to be a thousand years old.

I am now trying a way suggested by Mons. Correvon as likely to make these seeds germinate (by soaking them in a weak acid solution for six hours). Before finishing, I will add that hitherto, by plain sowing of the berries, I had only succeeded in obtaining two plants (after sowing a great number of berries), but by the above simple means I consider the difficulty quite solved. *George V. Perez, Puerto, Orotava, Teneriffe, June 14, 1906.*

HOME CORRESPONDENCE.

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

Housing of the Workers.—It may interest your readers to know that a Conference on Housing will be held at Letchworth (Garden City) on Saturday, July 14, at 3 p.m., under the auspices of the Christian Social Union. Papers on "Rural Housing" and "Co-partnership in Housing" will be read by Lady Gwendolen Cecil and Miss Sybella Gurney respectively, and the discussion will be opened by Mr. Henry Vivian, M.P. The housing problem underlies much of our social misery. So much is admitted, but what are we each doing to cope with it? Let us go down to Letchworth and see what they are doing there; let us consider whether these conditions of air and space and room to live may not be made the conditions of our British children everywhere, and not only in one or two favoured Garden Cities. How great a task lies before us, if this is to be accomplished; and how much need there is that men and women of good will should consider together how it may be done, and what they can do to help the work! All who are interested in the subject are invited to attend the Conference, and it is hoped that they will also take the opportunity of seeing what has now been done at Garden City, and especially of looking at the cottages belonging to the Garden City Tenants, Limited, which have been built round open spaces and greens, avoiding the usual mean street altogether. Any further particulars may be obtained from the Secretary of the Conference, Mr. Fredk. Litchfield, 22, Red Lion Square, W.C. *Henry Scott Holland (Rev.), 1, Amen Court, E.C. June 27, 1906.*

The Season in the Garden.—With us the untoward season, the combination of premature warmth and consequent growth of plant life in February, with the very severe frost of the middle of March, and the continuous cold winds and low temperature ever since till a short time ago, have brought about an accumulation of influences damaging to plant life such as I have never seen anything to approach. All tender leaves which began to develop a month or six weeks ago are stunted, twisted, and curled. Mildew is almost universal. Even Laurels have it all over the tenderer leaves, and in many instances in the old leaves, even. It is also on such things as Beech trees, Oaks, Birches and Lilacs. The Rose bushes are all curled up and deformed by it, and even the most vigorous kinds, which a few days ago were free, are now attacked. Green fly and brown fly (aphides, of course) are in such quantities that it is quite hopeless to try and do anything against them in a large Rose garden such as I have, and, perhaps worst of all, rust is over very nearly all the plants; leaves are turning yellow and dropping off by the thousand. Red rust, which I have scarcely ever seen in my garden before, is alarmingly prevalent amongst the Roses, and nearly all the first blooms are defective, with short-stunted petals, and in the midst of them a huge development of green centres, which spoils the flowers utterly. From such strong Roses as Mrs. Paul, Madame Isaac Pereire, and Wm. Allan Richardson, I have had to cut away the greater portion and by far the greater number of the first blooms. My gardener told me that a neighbouring farmer who has a very fine plant of W. A. Richardson growing in the front of his house and covering a porch, has thousands of blossoms, but he had not been able to find a single properly-formed Rose upon it. My fruit trees are dropping what seem to be well-formed fruits, Apples and Pears. I think the wood never ripened properly last autumn. After the end of last August we never had a day when it was pleasant to sit out of doors, and it was constantly wet, with chill rain. Even quite lately we had two or three days when the sun did not shine, and the maximum shade temperature was from 54° to 56°. *En revanche*—and it is the only thing I have to set against all this—I have a very good hay crop—I treat my field very liberally, and I am sure it pays, and if the forecast of this morning is at all justified I shall get it in very well, as I began to cut it yesterday, and it should be all down to-day. But amongst the curious peculiarities of the season is that cut flowers generally are not lasting at all, as they usually do, and as to the plants, the flowers of Rhododendrons and Wistarias have not lasted more than two-thirds of their usual time; the same with Thorns' Lilacs and Laburnums. I have one very curious development which is quite new to me. Three years ago I planted a hedge of Penzance Briars about 50 yards long; there were about 10 varieties. They have done very well, and at this moment the hedge is extraordinarily beautiful. My wife and I both noticed last year that many were coming with a double row of petals instead of the single one with which we began. This year most have two rows of petals, several have three, and some even four. Only two varieties have remained altogether single. I don't know if I have been too liberal to them, but I have never had such a thing happen to me before with any single Rose. *Southampton, June 19.*

Pilfering Botanists.—Complaints are being made just now by the keepers of the Aberdeen Public Parks concerning the depredations of students. No doubt, botanical research is a thing that very few citizens would feel it in their hearts to discourage, and more especially by young men who are studying for examinations, but when this research is carried out in the beautiful plots in the city parks, much to the destruction of natural art and beauty, there is good ground for objection. It has been a common practice recently for Aberdeen students to indiscriminately pull up the flowers and tear them to pieces; and this, too, without so much as "by your leave." Needless to say, a stricter watch is being kept, and it is hoped those young men will take a thought and mend their ways. *Aberdeen.*

A Severe Hailstorm.—A heavy hailstorm visited this neighbourhood on the night of Saturday, June 23. In these gardens glass to the extent, roughly, of about 2,000 panes, was broken. Gloxinias in a small house were riddled by the broken glass. Begonias, Caladiums, and other soft leaved plants also suffered. Crotons had branches broken by the falling glass, whilst the plant-houses were not the only parts of the gardens to suffer. Unfortunately Apples and Pears were knocked off ruthlessly, and many that are left present the appearance of having been struck with a stone. The more forward Strawberries were nearly all damaged, and Gooseberries, Currants, &c., covered the ground instead of the trees. Vegetables were also injured, and in some instances completely destroyed. Potatos in some cases were denuded of their leaves and presented nothing but the naked stalks. The beds of Onions looked as though boys had thrashed them with sticks, and Spinach and Lettuce had the appearance of having been trampled on. Clumps of Rhubarb have not a sound leaf left, nor has Gunnera in the pleasure grounds. A more complete wreck than the gardens presented it would be difficult to find. Cartloads of small twigs and leaves covered the ground in all directions. The hailstones were like broken ice and as large as Walnuts. Many were flat, and would completely cover a penny piece. The largest measured was 5 inches round. *E. Dumper, The Gardens, Hinton Admiral, Christchurch.*

"Partridge Canes."—Perhaps the most popular walking-stick at the present time is that known as the "Partridge cane." In the *Guide to the Kew Museums*, No. 2, Monocotyledons and Cryptogams (1895), p. 53, it is stated that these canes are "the stems of an unknown palm, largely imported from China." Investigations prove the canes in question to be the stems of Rhapis flabelliformis. This well-known palm, introduced into this country as long ago as 1774, is native of the woods and ravines of Southern China generally. It is also cultivated in the same regions, in the warmer parts of the Yangtsze Valley, and in Japan. For export the culms are cut down when 6 to 8 feet high and dried. The fibrous leaf-bases are removed and used locally for rope and mat-making. The "canes," now smooth and clean, are packed in bundles, covered with matting, and are ready for export. In this country the outer siliceous covering of the stems is removed, exposing the black fibrous structure of the wood, from which the name, "Partridge cane," is derived. These canes have been largely imported into this country for the last quarter of a century or more. Nearly all are exported from the Canton River delta to Hong Kong, and from thence to Europe and America. Rhapis humilis, Blume, and R. major, Blume, are probably merely forms of R. flabelliformis, and are here regarded as constituting one species only. *E. H. W.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

June 26th.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair), Sir J. Llewelyn, Bart., Revs. W. Wilks and G. Henslow, Prof. Boulger, Messrs. G. Gordon, H. Gussow, A. W. Sutton, E. M. Holmes, S. Pickering, J. W. Odell, and F. J. Chittenden (hon. sec.).

Azalea dying.—From Rugby came an Azalea which had suddenly gone off. No fungus or insect could be detected thereon, and it was the opinion of the committee that death was due to allowing the plant to become dry at the roots at some time.

Clematis "sporting."—Mr. Gordon showed double pale lilac flowers of Clematis which had appeared on two Clematis plants, which last year bore the usual dark flowers of Clematis Jackmanni and a small white flower respectively. It was thought that in all probability the flowers had been produced by the upgrowth from the stock on which the Clematis plants which flowered last year had been grafted.

Ascidia on Plumiera.—Mr. J. W. Odell showed some curious examples of these cup-like growths proceeding from near the base of the leafstalk of Plumiera lutea, looking exceedingly like stipular growths. Such structures are common on Cabbages, Lettuces, and Pelargoniums, but do not appear to have been recorded hitherto in Plumiera.

Shoot of Hyacinth Growing Downwards.—Prof. Boulger said his attention had been called to the growth of a Hyacinth, the bulb of which has been scratched out of the soil, and had lain on the surface with the shoot (which had just started growth) pointing downwards. The shoot continued to grow downwards to a depth of about 8 in., and produced flowers which, however, were not coloured. Prof. Henslow said that he showed a plant with a similar growth some years ago. In that case, however, the bulb had been planted upside down. It would appear that in such cases the power of response to the stimulus exercised by gravity is very slight.

Yellow Rose from Palestine.—Mr. A. W. Sutton read a letter from a correspondent concerning a yellow Rose which grew near Baalbeck, specimens of which he also showed. Dr. Masters recognised the Rose as Rosa lutea, and Sir John Llewellyn said he had seen it growing so profusely on the northern slopes of Mount Lebanon as to make a mass of colour visible at the distance of a mile. (See p. 11.)

Seedling of Delphinium "Belladonna." Mr. Sutton also showed flowers of some seedlings raised from seed produced by Delphinium Belladonna last year. This has not been known to produce seeds, at least since 1857, when the first record of the plant seems to have been made. A few seeds had been produced in the previous year, but none of these had proved fertile. The flowers of some of the seedlings resembled D. Belladonna very closely, but some more nearly approached D. formosum, and one bore flowers of a very beautiful deep blue tint.

Cannibalism among caterpillars.—Mr. Spencer Pickering said that in the course of some experiments with insecticides several larvæ of the winter moth had been kept together in captivity, and in one of the cages a caterpillar

had devoured all its companions, and others which had been supplied to it; eleven had been devoured in all, and the cannibal had grown to about four times its normal size. It has now turned into a chrysalis. It will be interesting, said Mr. PICKERING, to see whether the progeny of the moth will also possess carnivorous habits. It was remarked that several species of caterpillars showed cannibalistic propensities under certain circumstances; Mr. HOLMES thought this was the case particularly when water was withheld from them.

"Silver leaf" in Plums.—Mr. SPENCER PICKERING also said that he had been conducting experiments with this disease, which had been attributed to the fungus Stereum purpureum, a specimen of which he showed from a diseased tree at the meeting of the committee on October 24 last. A plantation of 112 young Plum trees had been made, and of these seventy-four had not been inoculated with the fungus, while thirty-eight had small pieces of the fungus inserted in their stems. Of the former none had developed the disease, while of the latter twenty-eight showed the characteristic silvering of the foliage within six weeks of the inoculation. This experiment confirms the results already obtained by Prof. PERCIVAL.

Diseased Irises, &c.—Mr. WORSLEY sent rhizomes and flowering stems of Iris pallida and Iris cuprea apparently attacked by the bacterial disease of Iris, concerning which a communication was read from Mr. MASSEE at the last meeting. Mr. WORSLEY said that his stock of I. pallida had been destroyed, most of I. cuprea, and all of I. Milesi, while some of I. gigantea had been killed and I. chinensis injured. I. germanica seems almost immune in his garden, while I. fœtidissima and I. Pseudacorus are entirely so. He also sent leaves of Crinum yemense from outdoors and under glass with leaves dying and becoming soft. C. Powelli, C. scabrum, C. giganteum, and several others had been similarly affected, but none of the plants had died. C. Moorei seems exempt. Dead leaves of Cordyline indivisa vera came from the same source, and C. australis had been attacked in the same manner. These plant diseases will be reported on at a future meeting.

Pæonies Dying.—B. C. WILLIAMS, Esq., F.R.H.S., of Henington, Dorchester, sent specimens of Pæony attacked by the fungus Botrytis pæoniæ (Sclerotinia pæoniæ). The shoots droop before the flower opens, and just above the surface of the soil a white web of fungal thread may be seen spreading over the surface of the stem. Later resting bodies or hard lumps (sclerotia) of a black colour are formed both above and below the surface of the soil. The diseased shoots should be removed and burnt as soon as discovered, and fresh stable manure should not be used for mulching. If plants have been attacked, it is well to remove the old soil from about them, and replace it with fresh soil with which lime has been mixed. This should be done in the spring.

Plants exhibited.—A newly-introduced Begonia, B. Pogget, from Kasai, Congo, having deep green leaves about 4 inches in length and 2 inches in width, only slightly oblique at the base, and small pink flowers in lateral clusters, the pistillate flowers having a fusiform ovary nearly 1 inch in length, showing no trace of the wings that are usual in the genus, was shown by the Director of the Botanic Gardens, Brussels. A Botanical Certificate was unanimously awarded to this plant on the ground of novelty and curious structure.

Abnormal Flowers of the Foxglove.—Mr. C. W. H. CREAVES, of Pwllheli, N. Wales, sent drawings illustrating the abnormal flowers of a self-sown Foxglove (Digitalis purpurea). The plant is a vigorous one, with normal foliage and eight racemes bearing some forty or fifty flowers each. A few of the flowers at the lower part of the raceme are normal, but the majority on each raceme exhibit the following marked variations (from the normal). The corolla is markedly bilabiate; the odd (anterior) petal hanging down in a manner suggestive of the labellum of certain Orchids. The filaments of the anterior pair of stamens—which are usually parallel to those of the posterior pair—curve outwards sharply at the points, where the upper and lower "lips" of the corolla diverge. The most curious feature, however, is that at the anterior edge, and near the tip, of each of the antero-lateral petals there is a single well-developed anther lobe. The latter are of the usual yellow colour with purple spots, and they contain pollen grains which appear quite normal under the microscope. There is no indication of filaments leading up to these anther lobes. The peculiar interest of these abnormal flowers appears to me to lie in the staminoid petals; for, although petaloid anthers are of quite common occurrence, the converse metamorphosis is, in my experience at any rate, a rarity. I may add that the plant bearing these flowers has possibly been superfed by the somewhat free use of liquid manure; but this, according to the generally accepted theory, should have induced what Göethe would have termed "retrogressive" metamorphosis, instead of the opposite tendency here exhibited.

(Photo by Rivers, Bath.

FIG. 8.—ANNA OLIVIER, A WELL-KNOWN TEA ROSE. FLOWER GLOBULAR, OF PALE BUFF COLOUR.

Abnormal Growth of Rhododendron.—Dr. MASTERS showed a drawing of a shoot of Rhododendron (R. Aucklandi × R. Fortunei) from Sir E. G. LODER, Leonardslee, Horsham, cut from a plant about twenty years of age, bearing solitary, imperfect, axillary flowers in the axils of leaves of the current season. The shoot was much elongated and showed a case of precocious flowering, the flowers, which should normally have opened next season, having developed this. The specimen was, moreover, particularly interesting from the fact that not only had the shoot elongated, but the bud scales had developed in the form of foliage leaves; the flowers were distorted in various ways.

Diseased Plants, &c.—Several other examples of diseased plants were exhibited, including Vine leaves with warts, Vine leaves attacked by red spider, Apple leaves with Fusicladium, &c.

LINNEAN SOCIETY.

JUNE 21.—Dr. A. Smith Woodward, F.R.S., Vice-President, in the Chair.

Miss L. S. Gibbs, F.L.S., read an abstract of her paper, "A Contribution to the Botany of Southern Rhodesia," illustrating her remarks by lantern slides from her own negatives. The collections on which the report was based were obtained in August to October 1905, at the end of the dry season. The air is dry and the sun's rays very strong, temperature from 80° to 90°, so that the country presented a burnt-up aspect, and the trees were bare, except a few evergreens. The veld is systematically burnt, to promote young growth for cattle-food, to the detriment or destruction of trees and shrubs. Distribution of species is wide, and the present paper tends to a confirmation, with many new records. Twenty-three new species are described, amongst the more interesting being the grass Erianthus teretifolius, Stapf, and a characteristic Elephantorhiza.

Mr. Carruthers, F.R.S., F.L.S., then read his paper on "The Authentic Portraits of Linnæus," with lantern-slides. He recalled the fact that in 1899 he made the subject the chief topic of his address at the anniversary meeting on May 24 of that year. He subsequently visited Sweden, Germany, and the Netherlands to inspect the originals, and read a paper detailing his results at

the general meeting held on November 19, 1891; a transcript of his remarks had been prepared, but it did not satisfy him, and nothing was published. The approaching bicentenary celebration of the birthday of Linnæus, for which the Swedes have been making extensive preparations, had induced him to revise his old transcript, and add some recently ascertained facts, which he now submitted to the Society.

The third paper was by D. Otto Stapf, F.L.S., entitled "Plantæ novæ Daweanæ in Uganda lectæ"; which, owing to the absence of the author due to a slight accident, was briefly introduced by Mr. T. A. Sprague, F.L.S., who had contributed some of the descriptions in the paper.

Mr. M. T. Dawe, Officer in charge of the Forestry and Scientific Department of the Uganda Protectorate, made an expedition from Entebbe, through Buddu and the Western and Nile provinces of that territory. His collections were transmitted from time to time to Kew, and his report was issued as a Blue Book (1906, Cd. 2904) last April, it gave an account of his journey, with some rough illustrations of specially noteworthy plants. Much new light is thrown on distribution, and new species are described, amongst them the new genus of Rutaceæ *Balsamocitrus*, Stapf, and a new species of Warburgia (Canellaceæ). As an appendix Mr. Dawe gives a summary of his report on the vegetation of the country traversed.

The reading of a paper by Sir Dietrich Brandis, K.C.I.E., F.R.S., F.L.S., "On the Structure of Bamboo Leaves," was postponed.

SOUTHAMPTON ROYAL HORTICULTURAL.

JUNE 27.—The summer show of this society was held on the above date in the county cricket ground, Southampton, the situation proving a desirable change from that of the Pier, the exhibition being a distinct success. Financially, too, the show was a greater success than formerly, when it was open for two days.

Roses were undoubtedly the feature of the exhibition. In the leading class for these flowers—that for forty-eight distinct blooms—there were five competitors. Messrs. HARKNESS & SONS, Hitchin, were distinctly ahead with large, shapely, well-coloured specimens, especially good flowers being those of White Lady, Horace Vernet, Mamie, Ulrich Brunner, Boadicea, Paule Lede, Duke of Teck, and A. K. Williams. 2nd: Mr. G. PRINCE, Longworth, Berks, with smaller examples.

For twelve triplets, Messrs. HARKNESS were again successful with high-class blossoms of Gabriel Luizet, Gustave Piganneau, Bessie Brown, Mamie, &c.

Tea or noisette Roses in twelve varieties were remarkably well shown by Mr. PRINCE, who easily secured the leading award in this class. Noticeable flowers were those of Maman and white M. Cochet, Comtesse de Nadaillac, and Mrs. E. Mawley.

Messrs. HARKNESS were successful in the class for six blooms of any dark-coloured Rose, while Mr. W. BURDEN (gr. to Lady Campbell), The Lodge, Bewbridge, I.O.W., was first in the class for six light-coloured flowers, with Mme. Cusin.

Garden or decorative Roses in twelve bunches were numerous and showy. Mr. G. PRINCE was first with a tastefully-arranged exhibit, but some of his bunches were of inferior merit. Clara Watson, Cecile Brunner, Madame A. Chatenay, and Papillon were the best examples.

Mr. ELLWOOD had much better flowers, but they were too tightly packed in the vases.

Mr. PRINCE was successful in the class for six bunches of single varieties.

In the gardeners' and amateurs' classes that for eighteen distinct varieties saw six entries. Mr. A. NEVILLE (gr. to F. W. Flight, Esq.), Cornstiles, Twyford, Winchester, staged high-class blooms that easily secured the first place. Prominent flowers were those of Mildred Grant, Captain Hayward, Boadicea, and Mrs. W. J. Grant.

Tea or noisette varieties were well displayed. Dr. SEATON, Woodside Cottage, Lymington, won the class for twelve blooms, Mrs. E. Mawley, Medea, and Souvenir d'Elise being his best examples. 2nd: Mr. A. MUNT, Hythe.

Sweet Peas were very meritorious. Mr. J. STEVENSON (gr. to the Duke of Hamilton), Mere'ey House, Wimborne, won Messrs. Toogood & Sons' prize for six bunches of these flowers among thirteen competitors.

Hardy Border Flowers.—Messrs. B. LADHAMS & Co., Shirley, Southampton, had the premier dozen bunches in distinct kinds, while for nine bunches Mr. H. MATTINGLEY (gr. to Lady Hopkins), Greatbridge House, Romsey, secured the first place with a bright display, including a huge sheaf of Gillenia trifoliata. Eight exhibits were seen in this latter class.

Plants were numerous and good. Mr. WILLS, Southampton, was first for a group of miscellaneous subjects arranged for effect.

Vegetables were splendidly shown, and added to the success of a fine show. In the class for six dishes of vegetables (Messrs. Sutton & Sons' prizes), Mr. E. BECKETT, Aldenham House Gardens, Elstree, won the premier place with an exhibit of superior quality.

No fewer than ten growers contested in the class for Messrs. Toogood & Sons' prizes for six dishes. Mr. ELLWOOD, with choice examples of Onions, Tomatos, Cauliflowers, &c., was distinctly ahead, and he also won Messrs. Carter's leading prize for vegetables.

NON-COMPETITIVE GROUPS.

Trade exhibits were numerous and good. Messrs. B. LADHAMS & Co., Shirley, Southampton, staged an interesting collection of herbaceous flowers, including a collection of Pinks, and a well-arranged rockery. (Gold Medal.)

Messrs. SUTTON & SONS, Reading, had an exhibit of Begonias, Gloxinias, Schizanthus, and Rhododendrons in pots; also Melons, Cucumbers, Tomatos, and Peas. (Gold Medal.)

Mr. C. W. BREADMORE, Winchester, had a large display of Sweet Peas of the leading varieties. (Gold Medal.)

Messrs. ROGERS & SONS, Southampton Nurseries, showed Roses in pots, cut Kalmias, and shrubs. (Silver-Gilt Medal.)

Messrs. E. HILLIER & SONS had an exhibit of cut shrubs and Roses. (Silver-Gilt Medal.)

ROYAL METEOROLOGICAL.

JUNE 20.—The final meeting of the session was held on the above date at the Society's rooms, 70, Victoria Street, Westminster, Mr. Richard Bentley, B.Sc.A., President, in the chair. Mr. E. J. Bellhouse read a paper on "The Mean Prevalence of Thunderstorms in Various Parts of the British Islands during the 25 years 1881-1905." The author gives the mean number of days in which thunder forms or thunder only occurred in each month, each season, and in each year at 53 stations situated in various parts of the United Kingdom. July is the month with the largest number of thunderstorms over Great Britain as a whole, and August at some places in the north of Scotland and north-west of England; while June is the stormiest month at nearly all the Irish stations. For the whole year the largest number of thunderstorms is over the northern and eastern parts of England, where more than 15 occur; while there are fewer than five in the west and south of Ireland and at most places in the north of Scotland. The summer distribution of thunderstorms is very similar to the annual distribution, while the winter distribution is quite different, when the largest numbers occur along the west coasts of Ireland and Scotland and extreme south-west of England.

Mr. W. H. Dines communicated a paper on a "Typical Squall at Oxshott, May 25, 1906."

ROYAL AGRICULTURAL.

The exhibits of the AGRICULTURAL EDUCATION ASSOCIATION have attracted a considerable amount of attention at the recent Royal shows. Until the formation of the Association, the value of the work done to advance agricultural science was minimised, because there was no endeavour to gather together the information gained from experiments and observations, or to co-ordinate the experiments made in the laboratory or in the field. In most advanced countries this is done by the State, but in England the principle of self-help or of individual enterprise is generally relied upon in matters relating to agriculture. Recognising this, those interested in agricultural education, seeing that the only way to ensure that the foundations of agricultural science might be placed on a firm basis, united in forming the association; and in this way a great step has been taken towards establishing an exact agricultural science. Its work is being recognised by the more important institutions associated with agricultural advancement, and is receiving their co-operation; but it is in no way allied to bodies which regard profit-earning as an object of their being. This year's exhibition aroused exceptional interest, and was associated with a forestry section, contributed to by several landowners and public bodies. Undoubtedly there is a strong wave of desire to leave the deep rut of prejudice which has been such a hindrance to progress in agricultural matters; and no better evidence of this could be found than the close examination that the crowd which thronged the exhibition made of the exhibits and the attention which they lent to the demonstrations. It has become recognised that at this exhibition there will be information as to the newest methods of treatment and illustrations of processes employed in research work.

Among matters of special interest at the Royal Agricultural Society's Show last week may be mentioned an exhibit from the AGRICULTURAL COLLEGE at Wye—the gooseberry mildew, which appeared in county Antrim in 1900. Unfortunately, little notice was taken of the disease at first; in fact, those who made the early investigations expected that it would not survive the change of climate from America, where it has done great injury for some years. However, in 1902 it appeared in county Derry, and in 1903 in county Dublin, and it has since spread over a wide area. Doubtless it will find its way to England in course of time. It is very important that the mistake made in Ireland should not be repeated, but that the infected trees should be burned at once. It appears in the months of May and June as a white mildew on the leaves, and this develops into a black scurf on the berries, making them unsaleable.

The CAMBRIDGE UNIVERSITY AGRICULTURAL EDUCATION DEPARTMENT had a number of specimens illustrating the Mendel law; but probably the most useful were those which bear on the rust in wheat. In the course of experiments in the cross-breeding of wheat, it was noticed that some varieties were practically free from the rust which afterwards develops into mildew, so destructive to the grain and straw), while others were very readily affected with it. Some of the plants resulting from crossing the readily-rusting varieties with those which had strong resisting powers were found to take the rust, and others not so. Observation showed that the proportion of rusting to non-rusting plants was constant, and followed the laws laid down by Mendel; consequently there is every reason to suppose that, even where a rusting variety is employed in the breeding, it will be possible to select a stock which will continue to be rust-resisting. This is the first year of observation on this point; but, if future experience shows confirmation, a most valuable weapon will have been found to combat the most serious disease affecting the wheat crop.—*Condensed from The Times.*

DUTCH HORTICULTURAL AND BOTANICAL.

AT a recent meeting the committee awarded First Class Certificates to Odontoglossum Harryanum var. Madame Hacke, from Mr. H. C. HACKE, Baarn (gr. Mr. Th. Hendricksen), the flowers of dark red, and of fine form; also to Cattleya Jean Hacke (Mendelii × Paskelliana), from the same exhibitor; this has white flowers of good form.

Certificates of Merit were awarded to Pyrethrum roseum fl. pl. Helena, a new plant from Mr. H. J. DE LANG, Oegsgeest, with flowers of pale yellow, tinted with salmon; Anguloa sanguinea, from Mr. C. J. KIKKERT, Haarlem, a strong plant with flowers of deep yellow, spotted with red; Cattleya Mossiæ Arnoldiana, from Mr. H. C. HACKE, Baarn, having white flowers tinted with light lilac, of fine form and possessing a good labellum.

Botanical Certificates were awarded to Scuticaria Hadweni, also from Mr. HACKE, the flowers are greenish yellow with brown spots; and to Sobralia macrantha, from Mr. HACKE, flowers large, beautiful, with sulphur-coloured throat.

A Silver Medal and a Bronze Medal were awarded to collections of 12 single and 12 double Pelargonium zonale in the finest varieties from Messrs. W. D. KELSSEN, DENANT & SON, at Aalsmeer.

NATIONAL ROSE.

VISITED BY H.M. THE QUEEN.

"If by each Rose we see
A thorn there grows,
Strive that no thorn shall be
Without its Rose."

JULY 5.—The annual metropolitan exhibition of the National Rose Society is taking place on Thursday as these pages are passing through the press. The show is held in the gardens of the Royal Botanic Society, Regent's Park, for the second time in succession. Previously the metropolitan exhibitions were held in the gardens of the Inner Temple, and in former years at the Crystal Palace. The present show is unusually extensive, and may be ranked among the largest the Society has ever held. Three large tents are employed, and still there is very little space to spare. Several honorary exhibits of a miscellaneous character are arranged in the corridor. In some of the AMATEUR Classes the competition is marvellous. In one, for instance, there are 36 boxes shown and in another 34 boxes. Shortly before 12 o'clock noon the show was visited by H.M THE QUEEN, who was escorted through the tents by Miss WILLMOTT, Mr. C. E. SHEA (President), Mr. ED. MAWLEY (Secretary), &c. The arrangements for the show had been made by Mr. ED. MAWLEY and Mr. E. F. HAWES, Superintendent of the Royal Botanic Society's gardens. The new seedling Roses have not been inspected, as we are compelled to leave the exhibition. The weather is beautiful, but the air in the tents is already becoming oppressively hot.

NURSERYMEN.

MIXED ROSES.

The Champion Trophy and Gold Medal in the Nurserymen's Section are always awarded to the winner of the 1st prize in the class for *Seventy-two blooms of distinct varieties*, which on this occasion is won by Messrs. B. R. CANT & SONS, The Old Rose Nurseries, Colchester. We cannot attempt in the short time at our disposal to enumerate the varieties, but must content ourselves with saying that the quality of the flowers is quite up to the usual standard of merit. Messrs. W. PRIOR & SONS, Mylands Nursery, Colchester, were second, and Messrs. FRANK CANT & Co., Braiswick Nurseries, Colchester, third. All the prizes at this show in this class will therefore go to one town, and that town in the extreme east of the country.

Forty distinct varieties (trebles).—In this very comprehensive class for trebles, there are four exhibits, including, therefore, 480 flowers. Messrs. B. R. CANT & SONS have the honour of winning the first prize with a beautiful collection in which the qualities of freshness and brilliant colour are more noticeable than that of mere size. Such brilliant flowers as Victor Hugo, Comtesse de Ludre, A. K. Williams, Captain Hayward, Edouard, Ben Cant, and Horace Vernet, with such pure white roses as Frau Karl Druschki, and pink ones as Carolina Testout, and lemon-coloured as Kaiserin Augusta Victoria present a fine effect. The second prize was won by Messrs. ALEX. DICKSON & SONS.

Forty-eight blooms, distinct varieties.—The judges had an unusually difficult task in adjudging this class, for there were as many as nine collections, most of them comprised of glorious and brilliantly-coloured flowers. At the very point of our leaving the first prize is given to Messrs. J. BURRELL & Co., and the second to Messrs. G. and W. H. BURCH.

Twenty-four blooms, distinct varieties.—The nurserymen's class for 24 blooms is usually a very favourite subject for competition, and the four competitors to-day are less numerous than might have been expected. Mr. CHAS. TURNER, Royal Nurseries, Slough, who has won the first prize in this class on so many previous occasions, has again acted up to tradition, and not only obtained premier honours, as also with Roses of very high quality. His varieties are Bessie Brown, A. K. Williams, Her Majesty, Duke of Edinburgh, Mrs. E. Mawley, Florence Pemberton, and Nestor. *Middle Row.*—Marquise Litta, Mildred Grant, Reynolds Hole, Marechal Niel, Horace Vernet, Frau Karl Druschki, Black Prince, and Maman Cochet. *Front Row.*—Mrs. J. Laing, Duke of Teck, The Bride, Chas. Lefebvre, Muriel Grahame, Mad. de Watteville, Niphetos, and Gustave Piganneau. Mr. JNO. MATTOCK, Headington, Oxford, is awarded the second prize, and Mr. WILL TAYLOR the third prize.

TEAS AND NOISETTES.

In the Tea and Noisette Roses there are very good flowers on view, and in the best collections there is much less disfiguration to be noticed on the petals than has been the case on some previous occasions.

Twenty-four blooms, distinct varieties.—There are five exhibits in this class, and the first prize is worthily won by Messrs. B. R. CANT & SONS, whose flowers are very lovely. Some of the best are Madame de Watteville, Ernest Metz, Golden Gate, Mrs. E. Mawley, Bridesmaid, and Cleopatra. Mr. GEORGE PRINCE, Longworth Nurseries, Oxford, is second, and Messrs. FRANK CANT & Co. third.

Twelve blooms, distinct varieties.—Out of seven exhibits in this class the best is shown by Messrs. J. BURRELL & Co., who had the following varieties:—Mrs. Ed. Mawley, Souvenir de Pierre, Notting, Bridesmaid, White Maman Cochet, Souvenir d'Elise Vardon, Maman Cochet, Mad. Hoste, Madame Cusin, Boadicea, Souvenir d'un Ami, Innocente Pirola, and Catherine Mermet. Second, Mr. JNO. MATTOCK, and third, Mr. GEORGE MOUNT, Canterbury.

ROSES IN BAMBOO TRIPODS, VASES, &c.

A very pretty display is made by collections of twenty distinct varieties, which are arranged in twenty bamboo tripods, the space occupied by each exhibit not exceeding 7 feet by 3 feet. The first prize in this novel class was won by Messrs. GEORGE COOLING & SONS, Bath, whose group contained H. T. and H. P. Roses, some of which, like Ulrich Brunner, Madame Jules Gravereaux, John Ruskin and Gladys Harkness, are of very fine quality; 2nd, Messrs. G. and W. H. BURCH, Peterborough; and third, Mr. CHAS. TURNER.

Fourteen distinct varieties of Teas and Noisettes (trebles) shown in fourteen vases.—Messrs. GEO. PRINCE, has won first prize in this class, and Messrs. D. PRIOR & SON has won second prize and Messrs. FRANK CANT & Co. the third.

Several classes are now arranged by the National Rose Society for exhibition varieties shown in vases, thus exploding the idea that was once common that such a system was impracticable for such varieties. In a competition for twelve distinct varieties, to include not more than six Teas or Noisettes, there were three exhibits, and Messrs. ALEX. DICKSON & SONS were awarded the first prize for a fine collection, embracing the following varieties, among others:—Marquise Litta, Countess of Annesley, Ulrich Brunner, Mrs. W. J. Grant, Caroline Testout, Lady Ashtown, which were shown best. Messrs FRANK CANT & Co. obtained second prize, and Messrs. D. PRIOR & SON the third.

DECORATIVE ROSES.

There are magnificent exhibits of these, but we cannot refer to them in detail. Mr. JNO. MATTOCK has an excellent exhibit in Class 14, and has won the first prizes in that class and in Class 15. The group of Roses shown by Messrs. PAUL & SON, The Old Nurseries, Cheshunt, in Class 16 is beyond praise, and Mr. GEO. MOUNT has a capital exhibit in Class 17, winning the first prize.

OPEN CLASSES.

Twelve Hybrid Teas, distinct.—The first prize in this class is awarded to Messrs. B. R. CANT & SONS for an even lot of perfect blooms. Very fine are the varieties Mildred Grant, which is the largest of them all, J. B. Clarke, Robert Scott, Bessie Brown, White Lady, and Caroline Testout are unexceptionable in size and condition. The second prize falls to Messrs. D. PRIOR & SON, very beautiful being the blooms of Caroline Testout, Liberty (a fine crimson), President Grant, Robert Scott, and Prince C. de Ligne. Messrs. ALEX. DICKSON & SON are the winners of the third prize, having half-a-dozen very fine blooms, and among them Mildred Grant, Marquise Litta, and Gladys Harkness.

Class 19.—In this class of 18 white or yellow Roses displayed in bamboo stands, the flowers make a telling display, and Kaiserin Augusta Victoria wins the first place for Messrs. S. BIDE & SONS, and Messrs. F. CANT & Co. take the second prize with Frau Karl Druschki, the third being taken by Messrs. BUNYARD & Co.

Class 20.—For 18 blooms of any other than white or yellow, Messrs. R. HARKNESS & Co. are first, and Messrs. B. CANT & Co. are second. This class is one of the best of its kind.

AMATEURS.

The CHAMPION TROPHY and replica offered for the best 36 blooms, distinct, was once more won by Mr. E. B. LINDSELL, being followed by F. DENNISON Esq. Mr. LINDSELL also won the Ben Cant Memorial prize. G. A. HAMMOND, Esq., won the Christy Challenge Cup, Lady CAMPBELL the President's Cup, E. J. HOLLAND, Esq., the Harkness Cup, and A. HILL GRAY, Esq., the Trophy for the best Teas and Noisettes, and the Prince Memorial prize.

NATIONAL SWEET PEA.

JULY 5.—The sixth annual exhibition of this society is being held in the Royal Horticultural Hall, Vincent Square, Westminster, as we go to press. The show is a great success, the number of entries totalling nearly one thousand. The exhibits entirely fill the hall and have overflowed into the two annexes, while most of the floral decorations are accommodated in the lecture room upstairs.

All the classes are well represented, and in addition many trade growers have staged large groups.

The floral decorations are a notable feature. Many new varieties being shown, some of superior merit, notably a buff-rose-coloured flower named Queen of Spain; Mrs. C. H. Curtis, a large rose-coloured flower, and Princess Maud of Wales, of a rich orange-carmine shade. A notable feature is the success of Mr. CHAS BREADMORE in the principal classes.

Eckford Memorial Challenge Cup.—No fewer than 46 collections were entered in this class, and nearly all these entries are staged. The trophy, which carries with it the Gold Medal of the Society, is of the value of 50 guineas, and is offered for 12 bunches in distinct varieties. This prize is secured by Mr. THOS. JONES, Bryn Penylan, Ruabon, N. Wales. His flowers are exceptionally robust, and are displayed on tall stems. The varieties are Black Knight, Dorothy Eckford, Countess Spencer, King Edward VII., Mrs. H. Sykes, Lady G. Hamilton, John Ingman, Mrs. R. F. Felton, Helen Pierce, Miss Willmott, Queen Alexandra, Romola Pizzani, Henry Eckford, and Helen Lewis. Second, Mr. Thos. Stevenson (gr. to E. MOCATTA, Esq.), Woburn Place, Addlestone. Third, G. D. FABER, C.B., M.P., Rush Court, Wallingford, Berks (gr. Mr. James Dymock).

In the special audit class for fifteen bunches of Sweet Peas ten displays are seen. The premier lot is shown by Mr. THOS. LEWIS, Bryn Penylan, Ruabon, N. Wales. The prize flowers are exceptionally large and bright, and are displayed on tall, stiff stems. Coccinea, Hon. Mrs. E. Kenyon, Gracie Greenwood (a beautiful vase), King Edward VII., and Mrs. W. Wright are all worthy of especial mention. Second, Mr. Thos. Stevenson (gr. to E. MOCATTA, Esq.), Woburn Place, Addlestone. Third, Miss BOOSEY, Bickley, Kent. The colours in the second prize exhibit are refined. Gladys Unwin and Mrs. W. Wright are especially good.

Collection of nineteen varieties.—Each variety was to be of a colour given in the Society's classification tables. Four competitors entered, the winner being Mr. CHAS. BREADMORE. Duke of Westminster (violet), Miss Willmott (orange scarlet), and Janet Scott (pink) are his best examples. Second, Messrs. G. & A. CLARK, LTD., Dover, with very large flowers. Third, Messrs. SALTMARSH, The Nurseries, Chelmsford.

Thirty-six bunches, distinct.—There are four good displays in this class, and great difference is noticed in the manner of staging. The second-prize group is well set up, the flowers being displayed on long stalks. Others are squat and too tightly bunched. The first prize is awarded Mr. BREADMORE for an even lot of flowers, of best form and colouring. A prominent variety is the bright red Queen Alexandra. Second, Mr. F. ACKLAND.

Twenty-four bunches, distinct.—This was a well-contested class. The first prize was won by Mr. JONES, Ruabon, N. Wales; second, Mr. S. HIBBENS, The Lodge, Ashford. Five exhibits were staged in this class.

Twenty-four bunches, distinct (open).—Entries in this class were numerous and of a high standard. The first prize was awarded to Mr. BREADMORE for a splendid display, the flowers having great substance and refined colours. The varieties Geo. Herbert and Lady Cooper may be mentioned as being especially good.

MARKETS.

COVENT GARDEN, *July 4.*

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemone, coronaria varieties	1 6- 3 0	Myosotis, per doz. bunches ...	1 6- 2 0
— fulgens, fl. pl.	3 0- 4 0	Odontoglossum crispum, per dozen blooms	2 0- 2 6
Calla æthiopica, per dozen	2 6- 4 0	Pæonies, per doz. bunches ...	4 0- 5 0
Centaurea cyanus, doz. bunches...	2 0- 4 0	Pelargoniums, show, per doz. bunches ...	3 0- 5 0
— suaveolens ...	3 0- 4 0	— Zonal, double scarlet... ...	5 0- 6 0
Coreopsis grandiflora, per doz. bunches ...	4 0- 6 0	Poppies (Iceland), per dz. bnchs.	2 0 -3 0
Carnations, per dozen blooms, best American various ...	2 0- 4 0	— Oriental, per bunch	0 6- 1 0
— smaller do. ...	1 0- 2 6	— Shirley ...	0 6- 0 9
— Malmaisons ...	3 0- 8 0	Pyrethrums, dozen bunches ...	3 0- 6 0
Cattleyas, per doz. blooms ...	8 0-10 0	Ranunculus, doz. bunches ..	4 0- 6 0
Eucharis grandiflora, per doz. blooms... ...	3 0- 4 0	Rhodanthe, per dz. bunches ...	3 0- 4 0
Gardenias, per doz. blooms... ...	1 6- 2 0	Roses, 12 blooms, Niphetos ...	1 0- 2 0
Gladiolus, various, per dz. bnchs..	9 0-12 0	— Bridesmaid ...	2 0- 3 0
— The Bride ...	5 0- 9 0	— Kaiserin A. Victoria ...	2 0- 4 0
Gypsophila elegans, per doz. bnches ...	3 0- 4 0	— Caroline Testout	3 0- 5 0
Iris germanica, per bunch	0 9- 1 0	— C. Mermet ...	1 6- 3 0
— Spanish, per doz. bunches...	1 6- 3 0	— General Jacqueminot	1 0- 2 0
Ixias	2 6- 4 0	— Liberty ...	2 0- 6 0
Lilium auratum ...	2 6- 3 0	— Madame Carnot	2 6- 3 0
— candidum, per bunch	1 6- 2 0	— Madame Chatenay	3 0- 6 0
— Iancifolium, rubrum and album	2 0- 3 0	— Mrs. J. Laing	3 0- 5 0
— longiflorum ...	3 0- 4 6	— from the open, various kinds, per dz. bnchs.	3 0- 6 0
Lily of the Valley, p. dz. bunches	6 0- 9 0	Statice, per dozen bunches ...	5 0- 8 0
— extra quality ...	9 0-12 0	Stephanotis, per dozen trusses	3 0- 5 0
Marguerites, white, p. dz. bunches	2 0- 3 0	Stocks (double white) per doz. bunches ...	3 0- 6 0
— yellow, per dz. bunches ...	2 0- 3 0	Sweet Peas, per doz. bunches ..	1 6- 5 0
Mignonette, dozen bunches ...	2 0- 3 0		

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, per doz.	5 0-10 0	Galax leaves, per doz. bunches...	1 6- 2 0
— — medium, bunch ...	1 6- 2 0	Hardy foliage (various), per dozen bunches	2 0- 3 0
— —short sprays per bunch...	0 6- 0 9	Hardy Grasses, per doz. bunches...	2 0- 3 0
— Sprengeri ...	0 6- 1 0	Ivy-leaves, bronze	1 6- 2 0
Adiantum cuneatum, doz. bun.	4 0- 6 0	— long trails per bundle... ...	1 0- 2 0
Berberis, p. bunch	2 6- 3 0	— short green, doz. bunches...	2 0- 3 0
Croton leaves, per bunch	1 0- 1 6	Moss, per gross ...	5 0- 6 0
Cycas leaves, each	1 6- 2 0	Myrtle, per dozen bunches ...	2 0- 5 0
Fern, English, p. dozen bunches	1 0- 2 0	Smilax, per dozen trails	2 0- 5 0
— French, doz. bunches ...	3 0- 4 0		

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

	s.d. s.d.		s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0	Cyperus alternifolius, dozen ...	4 0- 5 0
Aralia Sieboldi, per dozen ...	4 0- 6 0	— laxus, per doz	4 0- 5 0
— larger	9 0-12 0	Dracænas, per doz.	9 0-24 0
Araucaria excelsa, per dozen ...	12 0-30 0	Erica, per dozen...	24 0-26 0
Aspidistras, green, per dozen ...	18 0-30 0	— ventricosa magnifica ...	24 0-42 0
— variegated, per dozen	30 0-42 0	Euonymus, per dz.	4 0- 9 0
Asparagus plumosus nanus, doz.	9 0-12 0	Ferns, in thumbs, per 100... ...	7 0-10 0
— Sprengeri, doz.	6 0- 8 0	— in small and large 60's ...	16 0-25 0
— tenuissimus per dozen ...	8 0-10 0	— in 48's, per doz.	4 0-10 0
Begonias (tuberous), per dozen	5 0- 8 0	— in 32's, per doz.	10 0-18 0
Boronia elatior, per dozen	18 0-24 0	Ficus elastica, p. dz.	9 0-18 0
Bouvardias, per dozen	6 0- 8 0	— repens, per doz.	5 0- 8 0
Calceolarias, yellow	3 0- 4 0	Fuchsias, per doz.	4 0- 6 0
Chrysanthemum segetum ...	4 0- 9 0	Heliotrope, per dz.	4 0- 6 0
Clematis, per doz.	8 0- 9 0	Hydrangea Hortensia, per dozen	8 0-18 0
— in flower ...	18 0-24 0	— Thos. Hogg ...	12 0-24 0
Cocos Weddelliana, per dozen	9 0-18 0	— paniculata ...	6 0-18 0
Coleus	3 0- 5 0	Kentia Belmoreana, per dozen	12 0-18 0
Crassula, hybrid, per doz. ...	6 0- 9 0	— Forsteriana, per dozen ...	12 0-21 0
— larger size ...	18 0-24 0	Latania borbonica, per dozen	12 0-18 0
Crotons, per dozen	12 0-30 0	Lilium longiflorum, per dozen ...	12 0-18 0
		— Iancifolium, per dozen ...	18 0-24 0
		Lily of the Valley, per dozen ...	18 0-30 0

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

	s.d. s.d.		s.d. s.d.
Lobelia	4 0- 5 0	Petunias, double, per doz. ..	5 0- 6 0
Marguerites, white, per dozen ...	4 0- 8 0	— single (in 60's only)	1 6- 2 6
— yellow... ...	15 0-18 0	Rhodanthe, per dz.	3 0- 5 0
Mignonette, p. doz.	4 0- 6 0	Roses, per dozen ..	12 0 18 0
Musk, Harrison's, per doz. ...	3 0- 5 0	Saxifraga pyramidalis, per doz.	12 0-18 0
Pelargoniums (Zonals), per dozen	3 0- 5 0	Selaginella, dozen	4 0- 6 0
— Ivy-leaved, per dozen	5 0- 8 0	Spiræa japonica, per dozen ...	5 0-10 0
— show	6 0- 9 0	Verbena, Miss Willmott, per doz..	6 0- 8 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apricots (French), per box ...	1 0- 1 3	Nectarines, English	4 0-18 0
Bananas, bunch:		Nuts, Cobnuts, per doz. lb... ...	8 0 —
— No. 1 quality...	7 0- 9 0	— Brazils, new, per cwt. ...	45 0 48 0
— No. 2 quality...	6 0- 7 0	— Spanish, per bag	12 0 43 0
— Extra quality...	8 6-10 0	— Barcelona, per bag	24 6 —
— Grants, per bunch	11 0-13 0	— Monkey Nuts, per bag ...	18 0 —
— Jamaica ...	4 6- 6 0	— Walnuts, dried, cwt.	35 0 —
— Loose, per dz.	0 8- 1 3	—Chestnuts, Italian, per bag ...	13 6-15 0
Cherries (French), ½ sieve... ...	3 6- 6 6	— Cocoanuts, 100	10 6-13 6
½ sieve... ...	5 0-10 0	Oranges, per case:	
— boxes	1 0- 2 0	— Murcia ...	12 0-18 6
— French, squares	2 0- 3 6	— Jamaica ...	10 6 11 0
— English, ½ sieve	5 0-12 0	— Blood	9 6 11 6
— ½ sieve	3 6- 6 0	Peaches (English), per dozen ..	4 0 18 0
Currants (French), red, per bundle	2 9- 3 3	Pineapples, each	2 3- 4 6
— ½ sieve	6 0- 7 0	Plums (Cape), per box	10 0 —
— black, ½ sieve...	6 3- 6 9	— French, p. box	1 0 1 10
Figs, per dozen ...	2 0- 8 0	Raspberries, per punt.	2 0 —
Grapes (English), Black Hamburg, per lb.	0 10- 1 6	Strawberries, Kent, peck ...	3 0 —
— Alicante ...	1 3- 1 9	— gallon	1 6 —
— Colmars ...	1 6- 2 0	— punnetts ...	0 6 0 9
— English, Muscat, per lb. ...	1 6- 4 0	— French, crates (4 baskets) ...	7 6 10 0
Gooseberries (English), ½ sieve ...	4 0- 4 6	— French, crates 10 baskets) ...	8 0-10 0
Greengages (French), p. box	1 7- 1 10	— Southampton, per basket ...	1 0- 2 6
Lemons:			
— Messina, case	15 0-22 0		
— Naples, p. case	20 0 35 0		
Lychees, per box...	0 10- 1 0		
Melons, each ...	1 0- 3 0		

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, Green French, p. doz.	1 0- 2 6	Mushrooms, Buttons, per lb. ...	0 8- 1 0
Beans, Broad, per packet	0 6 —	Mustard and Cress, per dozen pun.	1 0- 1 6
— Broad (English), per bush.	2 0 —	Onions (Egyptian), bag	4 6 —
— Home grown, per lb.	0 8- 0 10	— pickling, per bushel... ...	3 6- 4 0
— French, p. pad	6 0- 7 0	— French, ½ bag.	2 3 —
— French, per ½ sieve ...	7 0- 7 6	— Spring, dozen bunches ...	1 0 —
— Channel Island	0 8- 0 10	Parsley, 12 bunches	1 0 1 6
Beetroot, bushel ...	1 0 —	— bushel... ...	2 6 —
Broccoli, sprouting, per bushel	1 6- 1 9	Peas (French flats)	3 0- 6 0
— per doz. ...	1 0- 2 0	— English, per bushel... ...	1 0 —
Cabbages, Spring, per bag ...	1 6 —	Potatos (new):—	
— red, per bushel	1 6- 2 0	— Channel Island Kidneys ...	0 2½- 0 3
Carrots, French pad	3 0 —	— Jersey, cwt. ...	6 6 —
— per bag, unwashed ...	2 0- 2 6	— St. Malo, cwt.	6 6 —
— per dz. bnchs., washed ...	1 6 —	Rhubarb, per doz. bundles ...	2 6 —
— new, per dozen bunches ...	4 0 —	Spring greens, per bushel	1 3 —
Cauliflowers, per tally	3 0-10 0	Salsafy, per dozen bundles ...	4 0 —
Chow Chow, per dozen	1 6- 2 0	Tomatos:—	
Cucumbers, dozen	2 0- 2 6	— English, per lb.	5 6- 6 0
Endive, per dozen	1 6- 2 0	— selected, per doz. lbs.	5 6 6 0
Horseradish, foreign, per dozen bundles ...	20 0-24 0	— small selected	4 0- 4 6
Leeks, 12 bundles	1 6- 3 0	— Seconds, per 12 lbs.... ...	3 0 —
Lettuces, Cos, per dozen	2 0 —	Turnips, per doz. bunches ...	1 0- 1 6
Marrows, per doz.	4 0- 6 0	— bags	1 0 —
Mint, per dozen ...	3 0- 3 0	— new, per dozen bunches ...	3 0- 4 0
Mushrooms (house) per lb.	0 9- 1 3	Turnip Tops, bush.	1 0- 1 6
		Watercress, per doz. bunches ..	0 4 —

REMARKS.—English Strawberries are plentiful and cheap. Supplies of Gooseberries are much shorter. English and Channel Islands Beans advanced in price very considerably during the week, and they are still realising good figures. There has also been a good demand for Tomatos, Peaches and Nectarines. Trade throughout the market has greatly improved. *E. H. Kidd, Covent Garden, July 4, 1906.*

POTATOS.

Lincolns, 40s. to 50s.; Duchess, 90s.; Jerseys, 6s. to 6s. 6d.; St. Malo, 5s. 6d. to 6s.; Cherbourgs, 5s. to 5s. 6d.; Dutch Rounds, 2s. 6d. per cwt. &c. *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Many empty stands are seen in the market, and trade in all pot plants is very uncertain. Flowering plants of best quality make fair prices. I find Kalosanthes (Crassula coccinea) realise from 18s. to 24s. per dozen, but the hybrid varieties of this plant sell slowly and for much lower prices. Hydrangea paniculata, though very good in quality, does not clear well. Both white and yellow Marguerites are overplentiful. Plants of the later sown batches of Mignonette are now very good. Fuchsias are still procurable in well-flowered plants. Zonal Pelargoniums in all the more popular sorts are still plentiful. The Ivy-leaved varieties are not of first quality. Verbena Miss Willmott and other varieties have little demand. Lilium longiflorum are offered at low prices, but even at reduced figures stocks do not clear well. I noted good plants of Spiræa Silver Sheath; S. multiflora compacta is also good. Saxifraga pyramidalis is still seen, but supplies will not last much longer. Among Roses are some nice good H. P.'s. Best quality Ramblers are not quite so plentiful. Coleus have to be sold at very low prices. Lobelia is also cheap. Ferns are well supplied. I find some of the choice Davallias are offered at prices no higher than were formerly obtained for ordinary Ferns. Seedling Ferns of various sorts, in store boxes, can be had cheap. The best boxes of Pteris Wimsetti, P. cristata, P. tremula, &c., may be bought for about 18s. per dozen boxes. Palms do not sell readily, but I think there will be an advance in prices later on. A few growers still have ordinary bedding plants on hand, but there is now little trade in them.

CUT FLOWERS.

I found prices for best cut blooms were higher this morning. There was a decided advance in the price of Lilium and Eucharis, while Gardenias were not over plentiful. Supplies of best quality Sweet Peas were short, but there were plenty of second rate Roses from the open ground which are now abundant and cheap, but superior blooms are not plentiful. Gladiolus the Bride is making better prices. English Irises are plentiful. Spanish Irises are also seen, but they are almost over for the season. White Pinks, chiefly the variety Mrs. Sinkins, are very abundant. Supplies of Carnations of second quality are excessive. "Malmaisons" have not sold well this season, the long stemmed American varieties having largely supplanted them. Although, as a rule, most flowers may be procured in the market, I heard enquiries for Heuchera sanguinea this morning, and there were none to be found. Kalanchoe flammea plants were also wanted, but none were to be had. Hardy flowers do not now sell well. The principal trade is among best quality produce and good white flowers. *A. H., Covent Garden, Wednesday, July 4, 1906.*

CATALOGUES RECEIVED.

ENGLISH.

GEORGE BUNYARD & Co., Maidstone, Kent. Strawberries and other fruits; Dutch Bulbs and Carnations.

B. R. CANT & SONS, The Old Rose Nurseries, Colchester.—Cut Roses.

W. MANGER & SONS, Guernsey.—Bulbs (wholesale).

FOREIGN.

RIHACHIRO TASOI, Minamiyoshida-machi, Yokohama, Japan. Bulbs, Plants and Seeds, with several coloured illustrations.

M. HERB, Naples, Italy.—General collection of Bulbs and Seeds for autumn planting.

A. DESSERT, Chenonceaux (Indre-et-Loire), France.—Pæonies.

SCHEDULES RECEIVED.

ARBORICULTURAL HORTICULTURAL SOCIETY'S 20th Exhibition to be held in the grounds belonging to J. T. Morland, Esq., on Thursday, August 16, 1906.

CAMBRIDGESHIRE HORTICULTURAL SOCIETY'S Summer Flower Show on July 10, and Autumn Show on Wednesday and Thursday, November 14 and 15, 1906.

SOUTHERN COUNTIES 9TH ANNUAL CARNATION SHOW to be held under the auspices of the Southampton Royal Horticultural Society on the Royal Pier, Southampton, on Friday, July 20, 1906.

GARDENERS' DEBATING SOCIETIES.

KINGSTON GARDENERS'.—Through the kindness of Alfred Tate, Esq., a large number of the members of this society visited Downside, Leatherhead, on the 28th ult., to view the Rose garden. The weather was delightful, and the garden an object of beauty. There were both dwarf and standard Roses in masses, clusters of climbing varieties on arches and pillars. In every direction were seen Roses of every description, near the house is a fountain pond, in which is a fine collection of Nymphæas, at the time of the visit in charming bloom. The beautiful herbaceous borders, the well-kept trees and shrubs, together with the charming Surrey scenery, all tend to make Downside a most attractive garden. The great conservatory with its drapings of climbers—especially the variegated Cobæa scandens, the cool Ferneries, beyond, the Carnation houses, especially one long span-roofed structure, filled with "Malmaison" Carnations in bloom, all elicited the warmest praise. The improvements which have been effected at Downside during the past 10 or 12 years, are very remarkable. Mr. Tate is well supported by his able gardener, Mr. W. Mease. Under his guidance the party was hospitably entertained at tea, at the Home Farm.

LEO ERRERA.—A bust of the deceased Professor has been placed in the Botanical Institute of the University of Brussels, by Madame Errera. The ceremonial was attended by a large gathering of the botanists and physiologists of Belgium.

THE FRUIT CROPS IN IRELAND.—In the July number of *Irish Gardening* is a tabulated statement on the lines of the Fruit Report, published in our columns yearly, showing the prospects of the Fruit Crop in the sister isle. The outlook as a whole is very satisfactory, in spite of the bad weather experienced in April and May. Apples are recorded as 67 per cent. above the average. Pears and Plums are failures. Gooseberries are abundant in spite of the American mildew which is stated to be spreading. Currants, Raspberries and Strawberries are favourably reported on. Our own report, embracing the whole of Great Britain and Ireland, will probably be issued towards the end of the month.

THE WEATHER.

THE WEATHER IN WEST HERTS.

A record rainfall.—The past week was, on the whole, rather a cool one. One day was particularly cold for the end of June, and on the coldest night the thermometer exposed on the lawn fell to within 2 degrees of the freezing-point. The ground is now warmer than it has lately been, but is still only about 1 degree warmer than is seasonable, both at 1 and 2 feet deep. The most remarkable meteorological event of the week was the heavy rainfall on the night of June 28. The rain began to fall at 10 p.m., and continued without intermission until noon on the following day. During those fourteen hours over 2¼ inches of rain fell, which is not only the heaviest fall I have yet recorded here for twelve hours, but also for twenty-four hours, at any period of the year. Of the total amount, about one-third found its way through the percolation gauge on which short grass is growing, and exactly one-half through the bare soil gauge. Through the former gauge no rain at all had passed for nearly twelve weeks, while no measurable quantity had come through the bare soil gauge for over three weeks. The sun shone on an average for 6¾ hours a day, or for half an hour a day longer than is usual at this season. Calms and light airs prevailed, and on one day the average rate of movement at 30 feet above the ground was less than half a mile an hour. The mean amount of moisture in the air at three o'clock in the afternoon was 4 per cent less than is seasonable.

JUNE

An exceptionally calm and sunny month.—The days were as a rule warm, while most of the nights were, on the other hand, more or less unseasonably cold. In fact, during the first three weeks there did not occur a single night on which the temperature was in excess of the average. On the warmest day the highest reading was 78 degrees, a low extreme maximum for the month, and on the coldest night the exposed thermometer showed 4 degrees of frost—an unusually low reading for the time of year. Rain fell on only nine days, and yet to the aggregate depth of 3½ inches, which is 1¼ inches in excess of the June average—making this the wettest June here, with one exception, in the last twenty-seven years. It should, however, be explained that all but an inch of the total measurement fell in a single night quite at the end of the month—the latter being the heaviest fall experienced here in any one day at any period of the year during the past twenty-one years. The sun shone on an average for 7¾ hours a day, or for 1½ hours a day longer than usual. This was the calmest June I have yet recorded, the rate of movement in no hour exceeding twelve miles. The amount of moisture in the air at 3 p.m. fell short of the average by 4 per cent.—*E.M., Berkhamsted, July 4, 1906.*

ENQUIRIES AND REPLIES.

TO CLEAN MARBLE AND ALABASTER.—We have many marble vases on the terraces, and being near to a town they have become blackened with smoke. In order to cleanse them I have tried soft-soap and monkey-brand soap in hot water, but the result is not equal to the labour it entails. In the winter gardens we have art-craft specimens of figures in alabaster that have got rather dirty. Can anyone tell me how to clean these? *Hortus.*

MOTOR MOWERS (see also p. 415).—Ransome's 42 inch motor mower has, we believe, been used in the Royal Gardens, Kew, for four seasons. It has improved in its working every year, and is now a most serviceable machine and gives but little trouble, although further experience will, no doubt, suggest more improvements in the manufacture. It uses two gallons of petrol per day, and does about the work of one and a half horses. It is of no value where the ground is hilly, nor should it be used where the ground is uneven. For rough places it is not so good as the ordinary horse machine. The great thing is to get a man to understand it. At Kew an intelligent man was selected from the ordinary labour staff, and after a season's experience he understood the machine and its working almost as well as a mechanic. He now keeps it going without expert aid except, of course, when a breakage occurs. *J. W.*

LILIUM SUTCHUANENSE AND L. MAXIMOWICZII.—Under the above heading in the issue of the *Gardeners' Chronicle* for June 23, a correspondent asks for the distinguishing characters of Lilium Maximowiczii and L. Sutchuanense. Although these may not appear to be very different on paper, in the living plants there are so many differences that I should say it would be quite impossible for the cultivator to confuse them, either when he takes the bulb in his hand to pot or plant it out, or when he sees the growing plants from the time they appear above the soil till the stems wither. In point of growth the nearest ally to L. Sutchuanense is L. tenuifolium, but the former is much more vigorous. L. Maximowiczii is not nearly so elegant a plant in growth as L. Sutchuanense.

	L. MAXIMOWICZII.	L. SUTCHUANENSE.
Bulb.	Pale yellow, flattish round.	White, tinged with pink, more especially the outer scales, cone shaped, acute.
Stem.	Angular, smooth.	Cylindrical, densely pilose.
Leaves.	Comparatively sparse, sometimes ½-1 inch apart, lanceolate or linear-lanceolate. ⅜-½ inch wide, spreading, smooth, prominently 3 nerved.	Crowded, narrowly linear. ⅛-¼ inch wide, decurved, rough, margins scabrid, prominently 1 nerved.
Peduncles.	Sub-erect, 2-4 inches.	Horizontal spreading, 3-8 inches.
Flowers.	Orange suffused with red, pale orange reverse, black spots, at least half as large again as L. sutchuanense.	Bright scarlet, scarlet reverse, black spots, rarely wanting.
Habitat.	Native of Japan.	Native of the province of Szechuan, Western China, some 2,000 miles west of Japan. *O.*

ANSWERS TO CORRESPONDENTS.

EMPLOYMENT AT KEW: *J. D.* You should apply to the curator, Royal Botanic Gardens, Kew, for an application form. Candidates are required to have had at least five years' experience in practical gardening, and must be between the ages of 20 and 25 years.

GRAPE MRS. PINCE: *Ireland.* This variety requires to be artificially pollenated, owing to its shy setting qualities. When the bunches are in flower, a high atmospheric temperature should be maintained and it should not be allowed to fall below 70° at night time. Although, as a rule, there is plenty of pollen present, it is often ineffective, because the stigma is not receptive at the same time. The use of pollen from other varieties should, therefore be resorted to and applied for some time after the flowers have opened. Select for the purpose pollen from the freest setting kinds growing in the same house. The practice of drawing the hand or a camel's-hair brush over the bunch when the flowers are open is to be recommended among shy setting kinds.

IVY-LEAVED PELARGONIUM: *A. G. B.* We believe the injury is due to the punctures of mites which are invisible to the naked eye. Immerse the plants in tobacco-water. We have not seen the Heliotrope.

LABURNUM: *W. T.* L. vulgare var. involuta.

MANURE AND INSECTICIDE COMBINED: *H. B.* The manurial value should be great, judged by the smell. Use the substance with caution and ascertain its worth by experiment. Fumes from carbolic acid, as used for insecticide purposes, are not strong enough to kill ordinary plants. See Mr. Ward's article, p. 411. Woodlice are best trapped with pieces of carrots, potatos, cabbage leaves, &c.

NAMES OF FRUITS: *J. S.* A very nice fruit of Bellegarde.

NAMES OF PLANTS: *A. M., Derry.* Campanula glomerata. *J. McL.* Platystemon californicum. —*Rev. P.* 1, Buddleia globosa; 2, Cotoneaster microphylla.—*C. P.* Erigeron philadelphicum. *J. B.* 1, Clerodendrum foetidum; 2, Morina longifolia; 3, Anthericum ramosum; 4, Send when in flower; 5, Philadelphus microphyllus; 6, Cistus sp.; 7, Indigofera australis.—*J. P. S.* Probably Thlaspi arvense, but specimens shrivelled out of recognition.—*Zurich*: Anemone rivularis (Himalaya).—*H. J. D.* Arum Dracunculus.—*H. G.* 1, Hemerocallis flava; 2, Philadephus coronarius; 3, Spiræa opulifolia; 4, not recognised; 5, Rhododendron ferrugineum; 6, Cornus mas, variegated form.—*Peters*: 1, Læha purpurata; 2, Cattleya Mossiæ; 3, Miltonia spectabilis radians; 4 and 5, both Odontoglossum citrosmum; 6 and 7, Dendrobium atro-violaceum; 8, Dendrobium chrysotoxum; 9, Lycaste Rossiana.—*A. Y.* 1, Pleurothallis rubens; 2, Maxillaria tenuifolia; 3, Colax jugosus; 4, Masdevallia simula; 5, Ada aurantiaca; 6, Odontoglossum Lindleyanum.—*W. R.* 1, Tradescantia virginica; 2, Lilium Martagon.—*W. T.* Phacelia tanacetifolia.—*E. F. P.* 1, Phlomis fruticosa; 2, Spiræa Filipendula, double variety.

NECTARINES DISEASED: *W. C.* We gave an illustration of similar diseased fruits on p. 320 in our issue for May 19. It is a form of gumming, but what induces the formation and discharge of gum is not definitely known. From your remarks it would appear you have overcropped the tree also, which under any conditions is inadvisable. In the autumn fork a little lime into the surface of the ground over the roots, or apply a top dressing containing a considerable proportion of old mortar rubble.

PEACH SHOOTS DISEASED: *W. B.* The branches are attacked with a fungus, Botrytis, which commonly attacks imperfectly ripened wood or young shoots that have experienced a chill. All diseased parts should be cut off and burned, otherwise the disease will spread. After pruning spray the trees with a rose-red solution of permanganate of potash dissolved in water. The leaves also show traces of the "shot hole" fungus.

PEAS: *R. S.* You have not sent any roots, and on the haulm itself there are no signs whatever of disease. Can it be the effect of drought?

PLANE: *A. M.* The specimens are attacked by the "Plane leaf scorch" (*Gloeosporium nervisequum*). This disease is difficult to deal with, but the trees might be syringed with Bordeaux mixture in spring as an experiment.

SILVER LEAF DISEASE *Bathford.* The shoots are badly affected with this disease. We know of no cure for it, although sulphate of iron has been known to do good in some cases. The condition has been attributed by some authorities to a fungus at the roots, which may account for those trees which were heavily dressed with gas lime appearing most affected. If the gas-lime had injured the roots, fungus would more readily make its entry into the tissues.

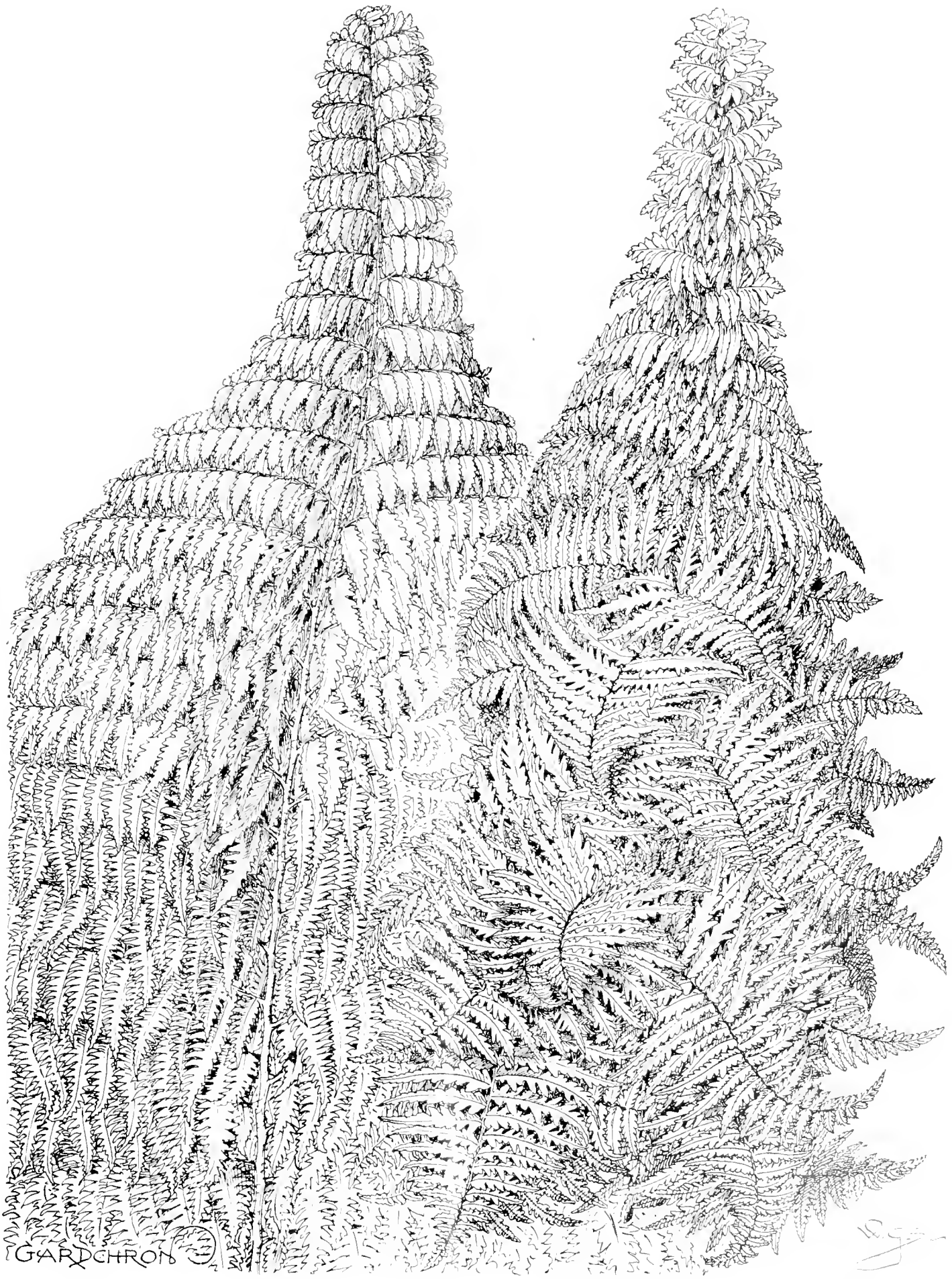
SOUVENIR DE LA MALMAISON CARNATION: *F. W. T.* Layered plants occasionally fail just below the collar, owing to the cut portion commencing to decay. Excess of water, or the presence of wire-worms, fungus, or eel-worm may be the cause, but it is impossible to determine without having specimens before us.

THREAD-LIKE WORM: *G. I.* The worm is Gordius aquaticus—the popular name of which is Hair Eel. A notion still prevails in many parts of the country that it is nothing more than a horse-hair which has somehow acquired life by long immersion in water! When the pools in which Gordius lives are dried up, it becomes shrivelled and apparently lifeless, but revives on an application of water. They are not injurious to vegetation.

VIOLAS: *H. A. S.* You should have sent specimens, for without these it is impossible to determine what has caused the failure.

WISTARIA: *Wistaria.* Probably there have grown up some trees near to the house that cast a shade over the plant. We recommend you to withhold manure so long as the Wistaria continues to make sufficient growth, and if any is afforded it should be of phosphates and potash rather than nitrogenous. The more you can expose the shoots to the influence of sunshine the better will be the chances of a good display of flowers.

COMMUNICATIONS RECEIVED.—H. J. E.—S. W. F.—A. S.—R. L.—D. P.—G. M.—L. G.—J. O'B.—Prof. Cogniaux, Nivelles.—S. M. B.—Dr. Perez, Orotava.—E. G. L.—A. G.—Botanic Garden, Zurich—C. Sprenger, Naples.—H. W. W.—W. K.—J. J. W.—E. B., Uganda—Count Solms, Strassburg—W. G. S.—J. F. L., Munich—H. R., Cape Town—J. B. S.—C. F. C.—W. H. & L. C.—H. H.—D. M.—J. S., Salisbury—G. H., Leamington—W. J.—L. C.—R. S.—E. N.—J. W.—J. Pitts—Ireland—F. B.—G. B.—G. M.—W. J.—W. A. C.—J. D. G.—Carter, Page & Co.—J. O'B.—E. H. J.—J. J. W.—W. W.—A. O.—E. M.—Hugh A. P.—M. O. Y.—J. C. & Sons—P. M. G.—Sander & Son C. E.—W. L. M.—G. W.—J. M.—W. K.—N. E. Br.—J. K. W. E. S.—F. P.—Grapes.—J. W.—J. R.—W.W.—A.G.F.—J. G. H.—J. T. S.—W. S.



NEPHROLEPIS EXALTATA, VAR. TODEAOIDES, A GREENHOUSE FERN, YOUNG FROND ON THE LEFT, CHANNELED IN THE CENTRE; OLDER FROND ON THE RIGHT.
(SEE TEXT.)

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle

No. 1,020.—SATURDAY, July 14, 1906.

CONTENTS.

ILLUSTRATIONS.

APPLE SCAB OR BLACK SPOT.

(CONIDIAL STAGE, *Fusicladium dendriticum* Fckl.)
(ASCIGEROUS STAGE, *Venturia Pomi* (Fr.) Wint.)

APPLE-GROWERS in Kent and Surrey have suffered within the last few years very considerable damage to their fruit through the attacks of a fungus which forms black spots on the ripe apple. The disease, which is known popularly as "Apple Scab," or "Black Spot," is caused by a minute fungus called Fusicladium dendriticum. Young Apples which are attacked by this fungus are either hindered in their growth and rendered more or less deformed, or the ripe Apple is found to be covered with blackish spots, due to the presence of the fungus, and the crop, in consequence, is rendered unsaleable, or its market value is much depreciated.

According to common report, the present disease is decidedly on the increase; varieties of Apples which, until lately, have been prized for their good growth and sound, clean fruit, are now beginning to be given up on account of their susceptibility to Apple Scab.

In consequence of reports received relating the damage caused by Apple Scab, visits were paid in the early spring of the present year to a number of plantations which during the past seasons suffered very considerable loss from this disease. I discovered that in these plantations the fungus was wintering over on the young wood of certain varieties of Apple.

The winter stage of the fungus causing Apple Scab is shown in the accompanying figures*. The young wood attacked by the fungus presents a blistered appearance, due to the presence of numerous blackish pustules of spores, which

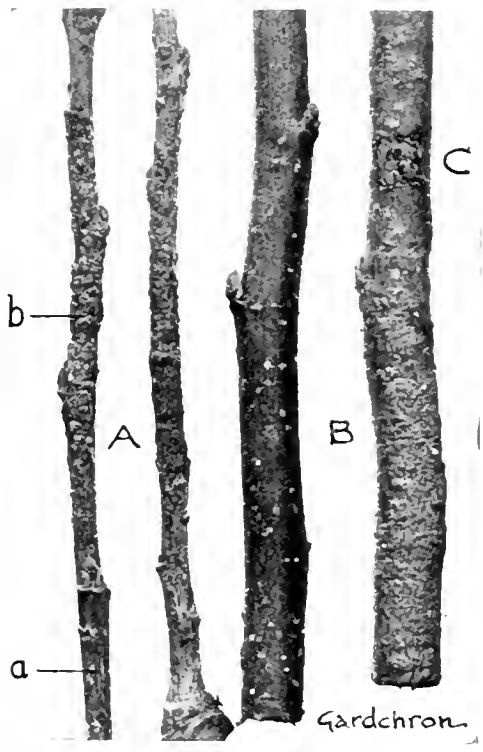


FIG. 9.

Apple Scab fungus on the young wood of Apple. A, On Cox's Orange Pippin; *a*, healthy wood; *b*, diseased wood, the blistered appearance being due to pustules of spores breaking through the bark. B, C, On Dumelow's Seedling or Wellington; B, healthy wood; C, twig with diseased patch below.

break out through the bark. The exact effect produced varies somewhat according to the variety of Apple attacked and the virulence of the disease. A diseased shoot of Cox's Orange Pippin is shown in fig. 9 (A); on the wood of this variety the fungus produces a conspicuous blistered appearance. In fig. 9 (B) the variety of Apple attacked is "Wellington"; here the evidence of disease is much slighter, the fungus breaking through the bark in small, inconspicuous, often scattered pustules. On "Lord Suffield," again, the effect produced on the wood may be very marked. I have seen cases with trees of this variety where the disease was of long standing, and little pruning had been done, where the shoots had become so full of the fungus that the bark was ruptured over comparatively large areas, and was beginning to peel off in flakes. Such affected areas are sometimes swollen and blistered, and then they superficially resemble those produced in the fungus disease known as "canker."

If one of the pustules of spores on an Apple twig affected by "scab" is cut across and examined under the microscope, we find the structure shown in fig. 10. Here we see some of the cells of the Apple twig shown at *a*; seated on these cells is a compact mass of fungus tissue, shown at *b*. This cushion-like mass of fungus spawn has pushed its way through the bark, which it eventually ruptured, and produced over its surface myriads of very minute brownish spores (*c*). Using a higher magnification, each spore is seen to have the shape shown in fig. 12 (2). These spores are capable of germinating immediately. In fig. 12 (2), below, spores which were taken from a diseased Apple twig in March are shown germinating after being kept for 24 hours in a hanging drop of water.

During the spring and early summer these spores are blown from the diseased wood on to the leaves and young fruit, and immediately infect them, producing the well-known "scab." Dark, olive-green patches, often somewhat velvety in appearance, are formed on the leaves; these patches often meet, and cover nearly the whole surface of the leaf, and in such cases a premature shedding of the leaves results. On the fruit the fungus forms conspicuous blackish spots, frequently circular in outline; in the case of badly-affected Apples the spots run together, and then cracks often occur, which cause the Apple to dry up. Apples affected with "scab" are not only ruined in appearance, but are affected injuriously as regards their keeping quality.

Although as a rule the Apple Scab fungus confines itself to the leaves and fruit, and is feared chiefly on account of the injury it does to the latter, I have seen cases where the young wood has been annually attacked so virulently that plantations have suffered damage to such an extent that the owner has been obliged to grub the trees; in these cases the variety attacked was "Lord Suffield."

Apple Scab as a disease of the fruit and leaves is comparatively well known as a fungus disease. The object of the present article is to point out that the wood of Apple trees is attacked by Apple Scab, and to familiarise growers with the appearance of such diseased wood, as in this country attention has not hitherto been directed to this point.

Now that the winter stage on the wood has been discovered, it must carefully be borne in mind that, in all probability, plantations which have suffered for several seasons from Apple Scab *are not necessarily free from the disease at any time of the year*, as the fungus will persist in its winter stage on the young wood of certain varieties of Apple in the plantation. In order to be able to take the fullest preventive measures (which are of the utmost importance in combating all fungus diseases), we must ascertain exactly what varieties of Apple are susceptible to

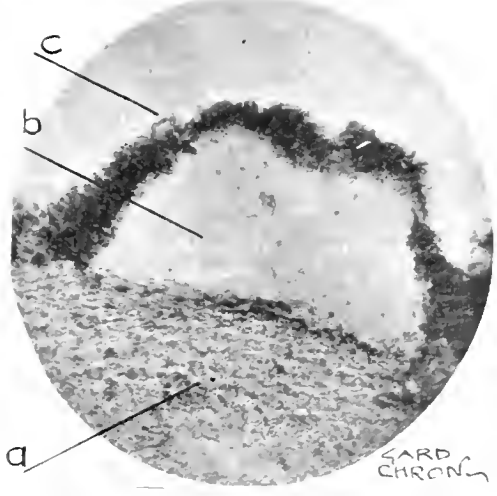


FIG. 10.

Apple Scab fungus: section through a pustule from a diseased branch of Cox's Orange Pippin; *a*, the branch; *b*, cushion-like mass of fungus; *c*, over its surface myriads of minute [illegible]

the present disease as regards [illegible]
Where "scab"-diseased wood [illegible]
Apple plantation in the winter [illegible]
certain that during the [illegible] fruit will suffer from "scab" [illegible] tions the grower should [illegible] the varieties that show diseased wood [illegible]

*The photographs were kindly taken for me by Mr. W. H. Hammond, of Canterbury.

cut in pruning as much as possible of the diseased wood, and spraying the tree with a strong winter wash of copper sulphate, and again in spring with dilute Bordeaux mixture.

I have found Apple Scab on the wood of the following nine varieties:—Yellow Ingestre or Summer Pippin (very bad); Lord Suffield

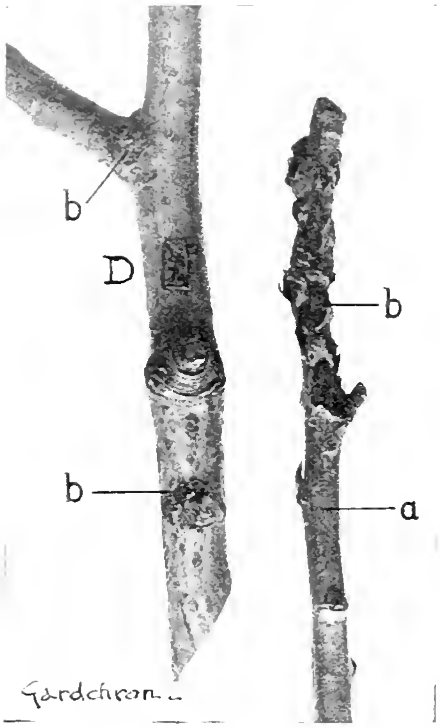


FIG. 11.
Pear Scab fungus on the young wood of Pears. To right on Doyenné du Comice; *a*, healthy wood; *b*, pustules of spores breaking through the bark, which is peeling off in flakes. D. On Pitmaston Duchess; *b b*, small scattered pustules of spores breaking through the bark.

(very bad: in cases where the trees had been neglected, ruining the trees); Ecklinville Seedling (very bad); Cox's Orange Pippin (very bad); Wellington; Cox's Pomona; Warner's King; Mr. Gladstone; Councillor. The disease has been reported to me as seriously affecting the *fruit* of the following varieties:—King of the Pippins; Worcester Pearmain; Cox's Pomona; Lord Grosvenor; Suffield; Domino; Ecklinville Seedling; Loddington Seedling; Yellow Ingestre; Northern Greening; Wellington. The attacks of the Apple Scab on the above eleven varieties are frequently so severe as to quite ruin the market value of the fruit. The following seven varieties are also more or less susceptible:—Duchess' Favourite, or Duchess of Gloucester; Quarrenden; Allington Pippin; Bismarck (mainly on the leaves); Blenheim Orange; Warner's King; Cox's Orange.

The following nine varieties have so far stood out as resistant to the disease:—Beauty of Bath; Bramley's Seedling; Newton Wonder; Grenadier; Lord Derby; Lane's Prince Albert; Queen; The Victorian; Golden Spire.†

I should like here to draw the special attention of fruit-growers to the present disease, and to the necessity of their taking strenuous measures to prevent the enormous resulting loss which the disease occasions. Apple Scab is well known in the United States, where it has proved to be the most serious pest with which the Apple-grower has to contend. "Wherever Apples are grown they suffer more or less from this parasite. Some years the injury may be so slight that it is scarcely noticed, and during others it may attack a tree with such intensity that there is scarcely enough fruit or foliage left to tell the tale of the cause of the destruction. Apple-growers in western New York and in southern Michigan will bear evidence of the condition of orchards in the summer and autumn of 1892 and 1893. The trees appeared as if burnt by fire, and it was said that in some counties there was not produced one car-load of first-class fruit."‡

Numerous experiments dealing with this disease have been carried out on a large and commercial scale by many of the Agricultural Experiment Stations in the United States. Two facts stand out clearly as the result of the work done: first, that no other fungus disease annually ruins such a large percentage of the crop; and, secondly, that the disease can be effectually controlled by systematic spraying with dilute Bordeaux mixture (4 lbs. copper sulphate, 4 lbs. quicklime, 50 gall. water). The Bordeaux mixture should be applied as follows:—First spraying, on unfolding leaves before the blossoms open; second spraying, just after the petals fall; third spraying, two or three weeks later. (If an insecticide is wanted, add in the second and third sprayings Paris Green at the rate of 1 lb. of Paris Green to 200 gall. of Bordeaux mixture; or arsenate of lead can be added to the Bordeaux mixture at the same rate per gallon as when water is used. The lime in the Bordeaux mixture neutralises any excess of free arsenic, and so makes it an excellent medium for arsenical sprays, since it removes all liability of scalding the foliage).

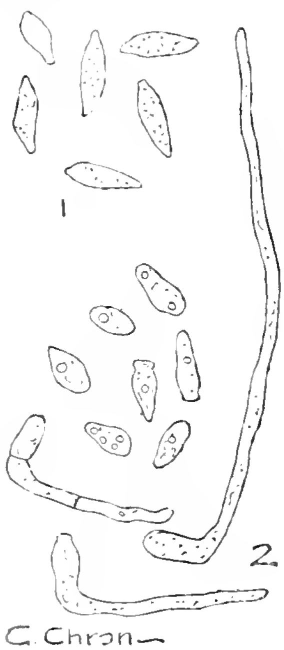


FIG. 12.
1. Spores of Pear Scab fungus; 2, spores [illegible] fungus, three spores [illegible] germinating [illegible]

If further (later) sprayings are necessary to save the fruit from "scab," it is not advisable to use Bordeaux mixture. Late sprayings may be made with the ammoniacal solution of copper carbonate.

When the Apple Scab fungus has attacked the wood it is most important that a strong winter wash should be applied when the tree is dormant. This wash may consist of copper sulphate alone (1 lb. of copper sulphate to 25 gall. of water).

The economic importance of now taking steps to prevent the further spread of the Apple Scab in our plantations may be realised from the fact that this very disease has been found to be so serious that in other countries legislation has been called in to protect the fruit-grower. Acts of Parliament in New Zealand (The Orchard and Garden Pests Act of 1903) and in Natal (The Plants Diseases Act, 1904) now enforce compulsory spraying of diseased trees, and also prohibit the importation of "scabby" Apples.

Since, at the present time, our Government gives no help in suppressing epidemic fungus diseases of cultivated plants, nor takes any steps towards preventing the importation of fresh diseases into our country,§ an imperative necessity exists for each individual fruit-grower to keep his plantations clean by frequent sprayings every year. The following fact is surely worth the serious attention of the Fruit-growers' Associations of this country. Apple Scab is causing thousands of pounds' worth of damage annually to our crops; foreign "scabby" Apples have a perfectly free entry into the country; while, if home-grown "scabby" Apples are attempted to be exported, they are refused admittance at the foreign docks.

PEAR SCAB.

(CONIDIAL STAGE, *Fusicladium pyrinum* (*Lib.*) *Fckl.*)
(ASCIGEROUS STAGE, *Venturia pyrina* (*Lib.*) *Aderh.*)

THE Pear Scab fungus is so similar to the Apple Scab fungus in general appearance and effect as scarcely to need a separate description. The spores are slightly different in shape from those found on the Apple, as may be seen by comparing fig. 12 (1) with fig. 12 (2). On Pear leaves the fungus produces the same velvety, dark, olive-green patches. "Scabby" Pears, however, crack, and become more deformed than "scabby" Apples. Young Pears are especially attacked; these soon fall off, or, if they mature, are usually worthless.

I have found Pear Scab more commonly present on the wood of affected trees than in the case of Apples; and here, again, the exact appearance of the diseased wood varies according to the variety of Pear attacked and the virulence of the disease. Sometimes the black pustules of spores are large and crowded, and quite conspicuous. These breaking through the bark of the young wood rupture it in a number of places, so that the diseased nature of the wood is very evident. This appearance is found on wood of the variety Doyenné du Comice when affected with Pear Scab (see fig. 11, to right). On certain other varieties the pustules are much smaller and cause much less evident ruptures of the bark, often far apart, and the disease is, consequently, far less conspicuous, as, for example, may occur in Pitmaston Duchess, a diseased twig of which is shown in fig. 11 (D). The general microscopical appearance of the diseased wood, with its pustules of spores, is the same as in Apple Scab (see fig. 10).

FIG. 13.—A PEAR FRUIT INJURED BY FUSICLADIUM DENDRITICUM.

† I should be very glad if readers of this journal would [illegible] notes on the behaviour in their neighbourhood of [illegible] varieties of Apples with regard to the Apple [illegible] of diseased wood on any other varieties [illegible]

‡ [illegible]eman. The Spraying of Plants, p. 245 (1903).

§ Two dangerous fungus diseases, affecting respectively the Gooseberry and Potato, have quite recently been imported, and are now widespread in our country.

I have seen wood badly affected with Pear Scab in the following varieties:—Doyenné du Comice (very bad); Marie Louise (very bad); Jargonelle (very bad); Beurré Diel; Beurré Bosc; Le Lectier; Doyenné Boussoch; Clapp's Favourite; Pitmaston Duchess; St. Germain.

It must be clearly understood that Pear trees, whose wood thus harbours the fungus through the winter months, will annually suffer from "scab" in the summer unless steps are taken to stop the disease. I have found constantly, in the case of Pear trees with affected wood, which have been kept under continuous observation through the spring, that the Pear Scab fungus spreads directly from the wood to the leaves as soon as they open, and to the young fruit as soon as it is formed.

The treatment for Pear Scab is exactly the same as for Apple Scab, viz., a winter spraying of the diseased wood with copper sulphate, and frequent spring and summer sprayings of the leaves and fruit, first with Bordeaux mixture and then with the ammoniacal solution of copper carbonate. *Ernest S. Salmon, South-Eastern Agricultural College, Wye, near Ashford, Kent.*

ORCHID NOTES AND GLEANINGS.

ERIA FLAVA.

An inflorescence of this singular and attractive species is sent by Sir Charles W. Strickland, Bart., Hildenley, Malton, Yorks, the possessor of many interesting Orchids and bulbous plants. Eria flava is an evergreen species, having ovate pseudo-bulbs bearing rather fleshy leaves. The inflorescence is 6 inches in length, and bears ten flowers each over an inch in width. The scape, ovaries and backs of the sepals are covered with white down. The sepals and petals are yellow. The lip is yellow with purple tinge on the raised or thickened parts. It is an intermediate-house plant, much more ornamental in appearance when not in flower than most of the other members of the genus, and when in bloom a very pretty species.

STANHOPEA TIGRINA.

THIS fine old species remains one of the most remarkable Orchids yet grown. A very fine variety of it is blooming in Miss Willmott's garden, Warley Place, Great Warley, Essex. The flowers, which are about 7 inches across, have the broadly ovate sepals of a deep claret purple colour, with a few pale yellow blotches near the base and apex. The smaller petals are yellow, heavily blotched with claret-purple, and the massive fleshy labellum is yellow at the base, with maroon blotches and white spotted with purple at the apex. It is native of Mexico, Guatemala, and some other parts of South America, and it thrives well in a basket suspended from the roof. An ordinary warm conservatory suits it admirably. The heavy pendent scapes bear three to four flowers each.

ONCIDIUM SARCODES ORNATUM.

A SPRAY of a very pretty and remarkable variety of Oncidium sarcodes is sent by the Hon. N. Charles Rothschild, Ashton Wold, Oundle (gr. Mr. J. T. Wells). It is one of several plants imported from Brazil, and similar in growth to the ordinary O. sarcodes, but differing very considerably in the colouring of the flowers, and especially in the front lobe of the lip, which is usually almost entirely yellow, being densely spotted with chestnut brown over the whole surface. The sepals and narrower petals are chestnut-brown margined with yellow, the lip yellow, with three large red-brown blotches in front of the purple-spotted crest, and smaller chestnut-brown blotches over the whole of the front lobe to the margin, which is bright yellow.

ONCIDIUM LIMMINGHEI.

ONE of the smallest of Oncidiums, with creeping habit, and with pseudo-bulbs and leaves resembling those of a miniature Oncidium Papilio, this pretty little species bears relatively large and showy flowers, borne on short, slender peduncles, each of which bears three or four flowers, which expand in succession. The flowers are an inch and a half across. The sepals and petals are reddish-brown with a yellow margin, the lip bright yellow spotted with red. The little plant presses closely to the block or raft on which it is grown. It is now a rare species, but it thrives well and flowers regularly with J. J. Neale, Esq., Lynwood, Penarth (gr. Mr. H. Haddon), who admires rare and curious Orchids, and is very successful in blooming reputedly difficult species.

IONOPSIS UTRICULARIOIDES.

A SPECIMEN of this pretty little species is sent by C. E. Franck, Esq., Yatton Hall, near Bristol, who collected it in Jamaica, together with several other interesting and rare species. It has linear, acuminate, fleshy leaves and slender panicles branched on the upper part and bearing numerous white flowers tinged with rose, the labellums, which constitute the prominent part of the flower, being veined with rose colour. The plant is dwarf, of tufted growth, and producing its elegant sprays of flowers freely, it forms a pretty object. The Ionopsis are Intermediate house plants, requiring to be grown on suspended blocks or rafts, but with little peat or sphagnum. *J. O'B.*

FLORISTS' FLOWERS.

SWEET PEA VARIETIES.

IN going over the trade trials of Sweet Peas last week, consisting of some 150 to 200 so-called varieties, the members of the Sweet Pea Society—amateur as well as trade—were all animated by the same wish, and that is that an early and complete expurgation from seed lists of all superseded varieties should be made. The trade complain of the need of still growing and listing so many comparatively indifferent varieties; the amateur growers assert that, owing to these huge lists, they are not helped to select only the best. Just as with Chrysanthemums, with the introduction of so many new varieties each year old ones go to the wall rapidly, and only a central, full, well-conducted, non-trade trial every year can satisfy the needs of the general grower. The trade trials were splendidly done, and rendered great service to those who inspected them, but they certainly did reveal most fully the grave need for a big purging of varieties. It is well to note that in looking over these trials, members of the Sweet Pea Society seemed to be concerned chiefly about form of flower and fitness for exhibition, about colour distinction or otherwise, and truth to assumed variety. But there seemed to be little regard shown for garden-decorative beauty, yet to myriads of private growers that is a matter of the first importance. Now and again varieties seemed to stand out markedly as very beautiful for garden effects. It was also felt, having in view the very inconstant character of many of the varieties seen, that it was both unsafe and unwise to make any awards to new ones until the constancy or otherwise of the stocks could be tested by growth. That fact, and the absolute need for a big clearance of all superseded varieties, seems to make an annual impartial trial by the society each year an absolute necessity. *A. D.*

KEW NOTES.

RARE PLANTS IN FLOWER.

CALCEOLARIA POLYRRHIZA.

THIS charming little plant, introduced from the Patagonian Andes some six years ago, has proved a most easy plant to manage, as well as being quite hardy. Either in a cool bay in the rock garden, where it has formed a tuft 2 feet in diameter, surmounted by its yellow flowers, or in an open situation among taller growing plants, it is quite at home. It is a spreading plant, and requires plenty of room.

CAMPANULA IMERETINA

Is a low-growing plant from the Caucasus, in the way of C. sibirica. It is said to grow naturally in the fissures of rocks, with branching stems, small leaves and violet blue flowers.

CAMPANULA RADDEANA.

This is also a native of the Caucasus, and seeds of it were received from the Tiflis Botanic Garden in the spring of 1905, along with those of the above species. They both flowered for the first time this year. C. Raddeana is a glabrous perennial of very distinct habit, growing about 1 foot high, with cordate leaves on long petioles. The flowers are large, and in colour like those of C. pulla.

C. PHYCTIDOCALYX.

This Armenian plant, which is also known under the name of C. amabilis, is also in flower. It is a somewhat disappointing plant at Kew, where it forms large tufts of deep green foliage, but produces very few flowering stems. It is intermediate in habit between C. Steveni and C. persicifolia.

C. SULPHUREA.

This interesting little annual from Palestine and Egypt is remarkable for its unique colouring among plants of this genus. Although its habit is not good, it is worth growing for its pale yellow colour alone, but it requires to be treated as a half-hardy annual. Planted out thickly in groups, it is effective enough, but, unfortunately, it does not set seed freely in this country, except in very favourable situations.

EPILOBIUM LUTEUM.

Although not a new species, this is still rare in gardens. It is, however, a choice plant of compact habit, growing about 1 foot high, and bearing a long succession of pale yellow flowers all through the month of June. A native of North-Western America, it does not seed about like most other members of this family, but increases slowly by means of underground stems. It is a good companion for the rosy-purple E. obcordata from the Rocky Mountains.

MECONOPSIS HETEROPHYLLA.

This charming annual is the sole representative of this genus in America, and was figured in the *Gardeners' Chronicle*, 1901, xxix., p. 413. It was introduced from California by Kew in 1899, and flowered that same year, being figured in the *Botanical Magazine*, t. 7635. About 18 inches high, with pinnatifid leaves of a succulent nature, the orange red flowers have a deep maroon centre, making it a most attractive plant. It produces seeds freely, and they come up readily when sown in the open border.

[illegible]

Is a new plant from Asia Minor, with white woolly leaves like those of some of the species of Phlomis, and stems about 1 foot high, bearing whorls of sulphur-yellow flowers. It grows in Alpine regions in stony soil at an elevation of 6,000 to 7,000 feet, and is quite hardy in this country in a well-drained warm situation.

Among other interesting plants in flower is a group of Dracunculus vulgaris in the Fern border, with its large handsome foliage and numerous chocolate-coloured spathes. *W. I., July 5.*

IRIS TINGITANA.

THIS is a very lovely Iris, its flowers being quite twice the size of those of the Spanish Iris, to which it is allied. The colouring is delightful, the standards being violet-blue and the falls a delicate French-grey, set off by the glowing yellow of the central blotch. Though introduced from Tangiers in 1872, and, therefore, fairly common, few growers are apparently able to flower it satisfactorily. Ever since its introduction letters have periodically appeared in the gardening Press lamenting its refusal to bloom. This ill-success has not been confined to amateurs who have recently made gardening their hobby, but many whose names are household words in the gardening world have also had to admit failure. Sir Michael Foster, writing a few years ago, stated that it had not flowered with him in the open, the late Rev. C. Wolley-Dod wrote that he had grown it 20 years without having flowered it, and the late Rev. Henry Ewbank recounted that for 15 years it had not bloomed with him, while Mr. Archer-Hind informed me that he had had it for 30 years and had only flowered it once, and Mr. Irwin Lynch, in his Book of the Iris, states that it is not worth general cultivation, presumably on account of its shy flowering. In the face of all these recorded failures it is pleasant to be able to chronicle a success, to which I think the accompanying illustration fully testifies. Out of 30 bulbs planted early last November, 29 threw up flower-spikes. The first flower opened at the end of February, more during March, and the majority early in April. The photograph was taken in the second week of April. I have now flowered this Iris for four years and should be very sorry to be without it, as a colony in full bloom is a beautiful sight and at the time quite the glory of the garden. In the neighbourhood of Penzance I have seen Iris tingitana flowering well, though I know several Cornish gardens where it blooms infrequently and I have never before met with it blooming as profusely as shown in the illustration. *S. H. Fitzherbert.*

THE ROSARY.

ROSES AT THE REGENT'S PARK SHOW.

THE following remarks are supplementary to the report published in the last issue of the *Gardeners' Chronicle* of the show held at the Royal Botanic Gardens on July 5. Statements, by those supposed to be capable of forming opinions on the prospects of this season's Roses, were rife as to the injury caused to the plants by late spring frosts; still, there were but few poor or disfigured flowers visible, the general good quality and perfection of form being remarkable. Where injury was most apparent was amongst blooms which came from highly-favoured Devonshire. In some districts flowering has been much retarded by cold weather in what is regarded as early summer, viz., the month of May, although, according to the astronomer, that season is not due till "midsummer day." In Sussex, as a nurseryman told us, they had had the severe infliction of eleven successive frosty nights in the month named, which had so retarded the blossoming of his Roses that none was in bloom at the date of the show, and the earliest were sure to show much disfigurement, although Nature would, he thought, compensate the cultivator by an abundant harvest of fine blooms a little later. It was hard to realise that such conditions had prevailed, on looking around the marquees and noting the galaxy of floral beauty in hybrid Teas, hybrid Perpetuals, and the so-called "garden Roses," which were piled up in such profusion on every side.

Everyone is on the alert on these occasions to inspect the new varieties that the rosarian hybridists vouchsafe. This year these were few, and not particularly beautiful. They sprang in every instance, in so far as regarded the premiated varieties, from the hybrid Tea class, either wholly or on one side or the other. Gold medals were awarded to the varieties William Shean and Mrs. Peter Blair, shown by the raisers, Messrs. Alexander Dickson and Sons, of Newtownards, Co. Down, Dublin, and Belfast, who raised Mrs. R. G. Sharman Crawford, Earl Dufferin, Mrs. W. J. Grant, and other fine Roses. The first-named is of a bright rose-pink tint, having fairly numerous petals, but withal a rather loosely-formed flower; and the second is of a pale yellow tint, with short, almost orbicular, petals. Another new variety, shown by Mr. S. Bide, nurseryman at Guildford and Aldershot, and named Queen of Spain, was awarded a certificate of merit. It has a compact form, especially beautiful when half expanded, when it seems to be the most perfect. The colour is a delicate flesh-pink. Mrs. Dorothy Robins is another new Rose—an immense flower, pink in colour, and with numerous petals; but this variety and Madame Constant, shown by that veteran rosarian Mr. G. Prince, were passed over by the judges.

The Roses which were shown by Messrs. B. R. Cant & Sons, and were awarded the premier prize in the nurserymen's champion competition for best 72 blooms, constituted an extremely fine lot, and displayed most vivid tints in the varieties C. J. Grahame, Duke of Wellington, Etienne Levet, A. Colomb, and Capt. Hayward.

The best light coloured varieties were the unapproachable Bessie Brown and Killarney. The winners of the second place, Messrs. D. Prior & Son, had many remarkably fine flowers, but the quality was unequal, although the blooms of E. Levet, Mrs. John Laing, and Ulrich Brunner would have satisfied the most exacting of judges.

The bulk of the prizes in the bigger classes were secured by the two firms of F. Cant & Co. and B. R. Cant & Sons, the magnificent blooms of Ulrich Brunner, Dupuy Jamain, and Horace Vernet having the pride of place in the winning stand of 40 triplets, shown by Messrs. B. R. Cant & Sons; and equally fine, in light coloured varieties, were White Lady, Frau K. Druschki, Mrs. J. Laing, Alice Lindsell, François Michelon, and Souvenir

FIG. 14.—IRIS TINGITANA.

d'Elise Vardon,. Messrs. F. Cant's flowers of Oberhofgartner Terke, Ulster, Lady Mary Fitzwilliam, and Mildred Grant were magnificent, and hardly less so were Aimée Cochet, Gustave Piganneau, and Dr. Andry. Messrs. Prior's stand showed many grand blooms. In the twenty triplet class Mr. G. Mount, the Canterbury grower, had very fresh-looking blooms, compact, and of fine substance. Messrs. C. & W. H. Burch, of Peterborough, and Cooling & Son, of Bath, exhibited creditable blooms, the varieties Gladys Harkness, J. Ruskin, J. Stuart Mill, and Mrs. John Laing being very superior. This was a class in which the competition was exceedingly strong. Excellent blooms in the twenty-four class came from Mr. C. Turner, of Slough.

Teas and Noisette Roses seemed to be scarcely in the best condition; still, the winning boxes, those of B. R. Cant & Sons, contained several gems in Mrs. Ed. Mawley, Marechal Niel, Souvenir d'Elise Vardon, and Golden Gate, a creamy white bloom tinted with pink, and of a globular shape.

Shown in bamboo stands, there were noticeable blooms of Augustine Guinnoiseau, L'Ideal, W. Allen Richardson, and Gardenia. These were shown by Mr. H. R. Darlington, an amateur.

The champion trophy, of the value of 50 guineas, given to the amateur who shows three six blooms distinct varieties, was awarded to Mr. E. B. Lindsell, the exhibit consisting of magnificent flowers.

Decorative Roses formed a large section of the exhibition, and in the nurserymen's section Mr. G. Mount distinguished himself, showing Papillon, Abel Chatenay, Gustave Regis, Marquis of Salisbury, and Electra; and Messrs. C. Prince and J. Mattock showed a capital lot of sprays, especially the last-named nurseryman, Madame Ravary, Lady Battersea, and Queen Alexandra being the better varieties.

No Rose show is complete nowadays without table decorations in Roses, and most of those observed were pleasing in design and materials, although, as we think, not sufficiently raised to allow of a clear view of one's *vis-a-vis*. The prettiest consisted of the climbing, single-flowered variety Mrs. O. G. Orpen (blush Rambler), the blooms having a width of 4 inches, and the buds exquisitely formed.

Miss J. B. Langton had a device of a central bowl, and small vases around it filled with the lovely Rosa macrantha.

Pyramids of Roses in bunches erected on tables 6 feet square showed off the "garden Roses" most effectively, admitting of their close inspection by the visitors. In this competition the leading exhibitors were Messrs. Paul & Son, F. Cant and Co., C. Turner, and G. Cooling & Sons. Baskets of Roses were very nice and showed great fertility in design; and a bowl shown by Mrs. O. G. Orpen, and filled with blooms of the white damask Lady Sarah Wilson, a crimson coloured variety, was awarded first prize and a piece of plate. Fine blooms were observed in the smaller competitions of Mad. Gabrielle Luizette, Mildred Grant, Florence Pemberton, Catherine Mount (a delicate flesh-coloured Rose), the pale yellow Medea, Duchess of Portland, Caroline Testout and Albert Grant.

The show was honoured by the presence of her Majesty Queen Alexandra, who showed much interest in the exhibits, and stayed an hour in the marquees.

The visitors were very numerous at one time during the afternoon, and the air in the marquees excessively warm, in spite of the abundant sprinkling of the roofs with water. The gardens of the R.B.S., now looking their best, afforded a pleasant retreat for the visitors. *Z.*

RUBUS "LUCRETIA."

MESSRS. R. VEITCH & SON, of Exeter, send us specimens of this bramble which was obtained from Holland some few years since but without any history. It has since been found to be a most useful plant in many ways, and from the fact of its producing an abundance of large white flowers, equal in size to those of R. deliciosus, it is a fitting subject for either pillars, pagodas, sloping banks or rocks. The fruits, which are large and black, ripen quite a fortnight earlier than those of the ordinary Blackberry, and are of a delicious sharp flavour and useful for cooking purposes.

FIG. 15.—RUBUS LUCRETIA.

ASTILBE ASTILBOIDES.

WRITING in the *Gardeners' Chronicle*, September, 1895, p. 359, Mons. E. Lemoine was the first to point out that the plant so widely known as Spiræa astilboides is not a Spiræa at all, but a true Astilbe. He gives a brief description of the plant, and says:—"Maximowicz, who discovered it in Japan, separated it from Spiræa, and called it Aruncus astilboides. But the species of Aruncus cannot be separated from Spiræas, and all the characteristics of the plant we allude to indicate that it is Astilbe or Hoteia. So, keeping the specific name—now, perhaps, too widely spread to be changed—it should be named Astilbe astilboides." In a footnote to the same article Lemoine adds:—"Our trials at fertilising A. astilboides var. floribunda with S. Aruncus have always been ineffectual, another reason for separating this plant from the Spiræas and rejecting the classification of Maximowicz."

Recently, working at Astilbe, I had the opportunity of examining the type-specimen preserved in the Kew Herbarium, together with living material, and I came to the conclusion that there can be no doubt but that Lemoine is right. He is wrong, however, in attributing the error to Maximowicz. Briefly, the history of the subject is this:—On June 4th, 1879, Mr. William Bull, of Chelsea, sent to Kew for name a plant which he regarded as a new species of Spiræa, he having received it from Japan. If it turned out to be new, he suggested that it might be called Spiræa nivosa, a provisional name under which he had exhibited the plant. This plant of Bull's was erroneously identified with Spiræa Aruncus var. astilboides of Maximowicz. Here the unfortunate mistake originated. Why the two plants should have been confused is not easy to understand. Three specimens of Maximowicz's plant are preserved in the Kew Herbarium, having been received from St. Petersburg in 1872. One of these specimens is in fruit, the others in flower. In all three the structure of the flowers is essentially that of Spiræa Aruncus. Bull's plant, on the other hand, is in structure essentially a true Astilbe.

Several species of Astilbe are known from Japan, but the Kew Herbarium does not possess any wild specimens of Astilbe astilboides, and I can find no record of any such having yet been discovered. This is remarkable, nevertheless, A. astilboides is very distinct from any other species of Astilbe known.

Mons. Lemoine here points out the absurdity of the name "Astilbe astilboides," but, whilst suggesting A. aruncoides as a more suitable name, remarks that the name is not more absurd than many others in use. Personally I have the gardener's dislike to changing well-established names if in any way avoidable, and, as a mere name "astilboides" will, I think, do as well as any other. It would possibly prevent confusion in the future if an entirely new name were given to this plant, but cultivators, at any rate, would not appreciate such a change. The following is the synonymy:—

ASTILBE ASTILBOIDES.—Lemoine, in *Gardeners' Chronicle*, September, 1895, p. 359.

Spiræa Astilboides.—T. Moore, in *Gardeners' Chronicle*, Dec. 1880, p. 113, with figure.

Spiræa Aruncus, VAR. *Astilboides*.—Hort. Kew non Maximowicz.

E. H. W.

AUSTRALIAN RUST FUNGI.

WE have just read with considerable interest and pleasure the latest contribution to the literature of the "rust fungi," called "The Rusts of Australia: their Structure, Nature, and Classification," by D. McAlpine, Government Vegetable Pathologist. It is a portly royal octavo volume of 350 pages, illustrated by 60 plates, including 366 figures. It is published in Melbourne, but we regret that the name of no London publisher appears on the title page, since there must be many mycologists in this country who would be glad to possess themselves of this volume, which is a clear epitome of all that is known, and suspected, of the "rust fungi" up to date. It is very satisfactory to see that the various views, sometimes conflicting, of different authors are scrupulously credited to their source, and, by an ingenious method, the reference is given in full to each quotation.

The work is divided into two parts, the first: "General characters and mode of life," in nineteen chapters; and the second part: "Classification and technical descriptions," with glossary and copious indices. Of the plates ten are in colours, the residue from photomicrographs.

We note with satisfaction that the explanations are as little technical as possible, and that the volume is calculated to meet the requirements of the most elementary, as well as of the most advanced, student.

We cannot give extended extracts from the work, but we have noted some few short ones for

tions which deserve to be borne in mind, as they are many of them suggestive.

"The vegetative reproduction through a perennial mycelium is not always easy to prove, but its importance cannot be overrated, for hidden in the tissues of the plant it cannot be reached by the ordinary means for controlling the growth and spread of fungi, but involves the destruction of the plant, or at least of those parts which harbour it. As Australian examples, we may note Uromyces trifolii, which attacks the white clover, and Phragmidium subcorticatum, or rose rust, in which the mycelium of the æcidial stage penetrates all the tissues, and in each succeeding year forms a new layer beneath the old." (P. 5.)

"The indirect relation of water, or the effect of soil moisture, which acts upon the parasite through its host, has also been studied and shown to be of great importance. An abundance of soil moisture at the growing season, in the case of Asparagus rust in California, is stated to increase the vigour and vitality of the host, and retard the development of the fungus." (P. 10.)

"Arthur comes to the conclusion that the æcidium, with its accompanying spermogonia, represents the original sexual stage of the fungus, and that it still retains much of its invigorating power." (P. 17.)

"It is interesting to notice that in some cases the uredospores may be produced, not only at the surface, but within the tissues. This happened with Puccinia pruni, in a Peach fruit, where spore-beds of rust freely producing uredospores were imbedded in the tissue, in more or less rounded cavities, up to 5mm. below the surface. The decaying fruit would form a splendid matrix for preserving the spores till next season." (P. 19.)

"The germination of the teleutospores of Puccinia graminis in Australia was tested under different conditions. Badly rusted straw was placed in the cool stores for three months, one portion being kept at a temperature of 4° C., and another at 18° C. A third portion of the same straw was simply kept in the open, and when tested for germination in the spring, only the spores exposed to the weather germinated." (P. 24.)

"It may be well to bear in mind that in no country in the world probably does Puccinia graminis cause as great injury to wheat as it does in Australia, a country where barberries are practically non-existent, and in which the æcidial stage has never been found." (P. 58.)

"Kirk informs me by letter that barberries are being largely used in New Zealand for hedges, but, up to the present, I have never seen any sign of æcidia of P. graminis on them, although I have examined hundreds." (P. 74.)

"Hennings has recently made observations which tend to show that plants previously susceptible to the attacks of a parasitic fungus may gradually become immune when they are changed to rich ground where they are better nourished and more vigorous." (P. 60.)

The above must suffice for our purpose, but there is one other, which is more personal.

"In Cooke's Handbook, published in 1892, there are only 72 recorded"; and again, "The Australian rusts recorded in the Handbook published in 1892 were 72, but the number now has reached 161." Nevertheless, he admits that "When one considers that the material had to be sent such long distances (thousands of miles), and often limited in quantity, as well as imperfectly preserved, it is surprising the number of rusts recorded, and the general accuracy of the descriptions."

In local lists we have observed that a great and rapid increase in the number of species recorded is not always evidence of progress, and may be open to suspicion. We remember some twenty years ago the process of "splitting" was applied to phanerogamic plants to an alarming extent. More recently some such process has become apparent in fungi. It is so easily done, but always has the odour of a quack medicine. Such old species as Puccinia compositarum or Puccinia umbelliferarum afford admirable facilities for the multiplication of species. It is a suggestion worthy of consideration whether local lists could not be very rapidly extended if it were feasible to constitute a new species, amongst the Uredines, for every separate host plant.

We observe also that our author has not yet purged himself of the opinion that the intermediate form of spore, or mesospore as we have called it, in Puccinia pruni, is really only the true uredospore seen obliquely, or topsy-turvy. How true it is that

"Faith, fanatic faith, once wedded fast
To some dear falsehood, hugs it to the last."

In order to justify this contention, it may be noted that our author has modified, or "amended," the diagnosis of the uredospore from the original three or four lines to double that number. The process of "amending" a diagnosis, in order to bridge over a difficulty, has always been received with more of condemnation than commendation, and, if sometimes convenient, it is never scientific. *M. C. C.*

NECESSARY PLANT FOOD CONSTITUENTS.

SOME recent investigations by Mr. Albert F. Woods, of the Bureau of Plant Industry, United States, have indicated that the element potash is necessary to the water pressure in plant-cells. This condition is one of the most important physical requirements of plant-growth. The fact that potash increases water pressure in cells would also indicate that it increases the water-absorbing power of the plant as a whole, thereby increasing its ability to hold more effectually in times of drought the water which it has absorbed.

Potash also increases the water-holding power of soils for the same reason, and is, therefore, most valuable from this standpoint on all sandy, porous soils. On the other hand, potash must be used with discretion on soils naturally heavy and wet, as it tends to cement the particles of soil together into hard lumps during very hot and dry weather.

Experiments have shown that a manuring of potash salts enables outdoor herbaceous plants to resist light frosts, probably by increasing the water-holding power of the plant-cells to which we have already referred, thus preventing an excessive withdrawal of the water from their tissues.

POTASH ESSENTIAL FOR MATURATION.

A supply of potash in the soil hastens and perfects the maturation of plants. When in combination with phosphoric acid, the wood of fruit and other trees in particular is solidified, thus enabling them to better withstand severe winter cold. Potash is extremely essential in fruit-bud formation. Professor Webber has stated that a lack of potash causes in the Orange tree an excessive growth of weak, immature wood, which does not harden up as winter approaches, and is liable to be injured by frost.

It is further possible that potash may have an influence on the intensity of colour in flowers and fruits, especially where the intensity depends on the amount of acid present in the cell sap. The importance of varying tones of colour is well understood by florists, and the ability to slightly change a shade by the use of chemical fertilisers would be valuable not only to florists, but to fruit growers and other horticulturists. The whole question should receive careful investigation by those capable of conducting such work.

POTASH IN SOILS.

Clay soils, and particularly clay loams, usually contain about six-tenths of one per cent. of potash; lighter loams about three-tenths of one per cent.; while exclusively sandy soils contain less than one-tenth of a per cent., but even this small amount is equivalent to 3,500lb. of potash per acre, assuming that an acre of land one foot deep weighs 3,500,000lb.

As a rule, therefore, it is only upon the exclusively sandy soils that a lack of potash may be expected. And yet it is found at Rothamsted, that with a potash content of 36,000lb. per acre in the top 9 inches of soil, the growing plants are unable to procure sufficient for their needs. The greater part is locked up in an inert condition, so that the addition of a few hundredweights of sulphate of potash in the soluble form, makes all the difference between a full or partial crop.

POTASH AS MANURE.

In the use of potash manures, careful attention should be given to their composition. Muriate, also called chloride of potash, kainit salt, and sulphate of potash are examples of the common potash fertilisers in use. The two former are, as a rule, cheaper, and especially the kainit, and for some crops just as good as the sulphate, and should, therefore, in these cases be used. The sulphate is preferable for certain crops, and when doubt exists as to a full supply of available lime in the soil, sulphate of potash is much safer and more satisfactory.

GARDEN FLOWERS.

A loose, warm soil, rich in humus, is the first requisite for a healthy growth, a luxuriant development, and for a plentiful inflorescence of all kinds of garden flowers. But the physical condition of the soil is only one of the needful factors for successful production; the other is a vigorous and plentiful nutrition of the crops.

Plants not only differ in their power of acquiring food, but certain plants are able, because of their peculiar root system, or period of growth, to appropriate food more readily from insoluble sources than others.

Nitrogen, phosphoric acid, and potash are seldom or never present in the same variety or species of plants in the same proportions when grown in different localities. They associate themselves in the living organism not only by chemical affinities, but they are governed by many agencies, as hereditary forces in the plant, moisture, sunlight, heat and cold, presence or absence of an abundance of plant-food, and the ease or difficulty of securing it.

At the same time, analyses of soils and plants answer questions which could not be obtained in any other way, and usually indicate the direction which should be taken to reach the most satisfactory results.

In regard to the production of garden-flowers, we find, as a rule, that phosphoric acid is a much more important constituent than it is in the growth of kitchen vegetables.

The following table gives the proportion of phosphoric acid and of potash in the ashes of ten selected species of flowers, as analysed and recorded by Dr. A. B. Griffiths:—

Description of Flower.	Phosphoric Acid, per cent.	Potash, per cent.
Veronicas	34.3	30.3
Lupines	39.2	22.0
Martynias	32.3	26.2
Salpiglossis	26.3	26.1
Verbenas	42.7	28.2
Daturas	34.7	20.2
Echeverias	32.1	26.9
Godetias	23.1	30.1
Auriculas	33.9	16.6
Gladiolus	28.2	18.9
Mean	33.7	24.6

The data show us that the average amount of phosphoric acid in the ashes of these ten species of flowers is 33.7 per cent., equal to one-third of the whole of the constituents; while the potash forms but 24.6 per cent., rather less than a quarter of the whole weight of the mineral

elements. In the case of kitchen vegetables, these proportions are reversed. This indicates the importance of a full supply of phosphoric acid in the soil if satisfactory flowering plants are to be raised.

FUNCTIONS OF PHOSPHORIC ACID IN PLANT GROWTH.

We find that the element phosphoric acid enters largely into the nutrition of the nucleus of all plant cells, and it is important to remember that the nucleus is the most highly specialised portion of every living cell, and is its controlling centre. In the absence of phosphoric acid, the nucleus can neither grow nor divide for the production of new cells, and the growth of the plant comes, therefore, to a standstill.

Phosphoric acid is also an important constituent of the green chlorophyll bodies. The formation of sugar and starch from the carbonic acid of the air can be accomplished by plants only when the chlorophyllous matters are present. Thus the reduction of phosphoric acid in the soil below a certain amount, besides preventing growth, causes a yellowing of the foliage. Some Orange growers claim to be able to recognise phosphate starvation by the appearance of the young leaves. If these, when they first push out, or while they are still young and tender, present a slightly variegated appearance, mottled with light and dark green, it is claimed that they are suffering from a lack of phosphoric acid, and that if a liberal application of superphosphate, basic slag, or bone meal is applied, this appearance may be checked.

A similar mottling of the leaves of garden plants cannot always be cured by the addition of phosphates alone, it is necessary that potash be also added.

Yellowing of foliage due to the lack of iron in the soil usually shows itself first in the young leaf buds, while the older leaves may retain for a long time their normal green colour.

A lack of nitrogen in the soil is usually indicated by much the same symptoms as are produced by a lack of phosphoric acid and iron. *J. J. Willis, Harpenden.*

FERN CRESTS.

Even the most casual observer at our exhibitions of flowers and foliage plants must have noted how large a proportion of the Ferns exhibited display tassels on the tips, while nothing of the sort is ever seen in the not infrequently very similar leaves of other plants. The production of these tassels is indeed a very peculiar feature, so many widely diverse species of Ferns having developed them in their varietal forms, and in our native species not only have the large majority of them varied in this way, but a number have done so repeatedly and on very different lines. The tassels are produced by the midribs or midveins of the frond or its subdivisions splitting up, or rather branching into a number of minor ones, each of which carries a leafy extension with it, and, in this way, forms a bunchy or fan-like termination instead of a pointed one. This may be explained thus: each sub-division ordinarily is built up by cells, which multiply at the tip, where there is always one mother-cell, the base of which divides and sub-divides and builds up the division as it proceeds. With the tasselled forms this mother-cell appears to divide not merely from the base, but also to split up terminally into other mother-cells, each one of which then proceeds to do its best to build up an independent division on its own account; result, a bunch. Leaves of flowering plants grow on a different plan, and cannot, therefore, become tasselled in the same way, though we have a sort of imitation of it in the Celosias and other fasciated plants, but in these a number of growing points are really engendered embryonically, and their resulting growths become eventually massed together for lack of room, while a Fern tassel only begins at its own base and then radiates freely—a fundamental difference. The degree to which this tasselling is carried varies indefinitely. It appears frequently in what may be termed an accidental form in the shape of duplicated or partly-duplicated fronds, where the midrib has split into two branches, each then producing divisions on both sides. There is, however, no permanence in these "accidentals"; the rest of the fronds are normal, and the spore produce normal. The common Hartstongue is very apt to vary in this minor way, by producing forked tips, and a quite common form, "lobatum," has the frond tip multiplied into several and in a constant form; we usually come across several of these in a day's hunting. It is, however, in the divided Ferns, such as the Lady Ferns, Male Ferns, Shield Ferns, that we find this capacity for tasselling or cresting most highly developed. In the finest crested wild "sport" of the Lady Fern (*A. ff. cristatum* Kilrushi, which fell to the writer's lot in an Irish ditch, the tassels on the pinnæ or side divisions are very long, and so much sub-divided into minor strands that, by actually counting, there are innumerable divisions* in one tassel, while the huge bunch-tassel at the frond tip is also beyond counting. In this, as is usual with thoroughbreds, the pinnules, or secondary divisions, are also tasselled. In wild finds this is as far as cresting goes, but in one of the higher developed selected forms, *A. f. f. percristatum superbum*, it goes a step farther, for the pinnulets or divisions of the pinnules are dilated into tiny tassels. As all this occurs on perfectly symmetrical lines, we have the curious fact that at definite specified stages all over the frond and at many hundreds of points, every mother or terminal cell alters its plan of construction and breaks up into others to form a tassel instead of a point. This is characteristic of all crested forms proper, but in many varieties there occurs instead an irregular branching, resulting in repeatedly forked fronds varying from simple forked tips or twin fronds joined at the base to fronds which branch over and over again: in extreme forms of this kind the flat frond formation disappears entirely and the Fern becomes a bunch of ramifications. *Scolopendrium v. densum* Kelway, a diminutive Hartstongue, and *A. f.f. unco-glomeratum*, a Lady Fern, have become in this way like balls of delicate moss, with nothing truly Fern-like about them. The character of tasselling proper also varies greatly. Thus a tassel may be formed by one simultaneous division into many pointed tips without re-division (polydactylous or multiceps), the result being a flat radiation, or the divisions may split up again and again in radiating lines forming a compact fan. Both these types of division may also radiate like the tip of a lightning conductor, so as to form bunches (corymbiferous). As a rule such tassels are seen to be practically complete when the frond tips uncoil and only expand subsequently; but, in other cases, the frond and its divisions may unfold without tassels, the tips presenting merely a woolly appearance, which subsequently grows out into, it may be, crests of considerable expansion. We have, indeed, seen a crest as large as a cricket ball developed on a form of Pteris serrulata (Appleby ana) from a single point by continuous growth, and forking and re-forking almost ad infinitum, the tips being apparently unable to close, as it were, the circuits of growth. Naturally, also, the character of the tassels corresponds with the frond type, a lax frond having lax terminals, and dense, congested ones, equally compact crests. As a rule, too, the divisions of a frond are really miniatures of itself, so that a frond with a large terminal tassel will bear well-tasselled pinnæ, and probably traces of cresting in the pinnules, but there are a few instances where the pinnæ, and even the pinnule, are tasselled and the frond tip pointed or only slightly tasselled, and converse cases of large terminal tassel and pointed side divisions. A curious fact in connection with crested Ferns is that although extra leafiness, i.e., abnormal expansion of the frond forming what are known as the plumose or feathery section of varieties, is accompanied by a decrease in the production of spores, the production of even abundant crests has no such effect, the crests themselves producing spores copiously. These spores, too, as a rule, reproduce the crested type, though frequently on a variable scale, i.e., more or less developed, and it is due to this fact that the Fern selective cultivator has been able to raise varieties in which the cresting is even more developed than in the best wild finds. *Chas. T. Druery, V.M.H., F.L.S.*

[The repeated sub-division of the frond so remarkable in Ferns, and doubtless connected with the forked venation characteristic of these plants, is sometimes seen in other plants, such as Kales, Parsley, a particular variety of Anemone japonica, and various water-plants where the venation is of a different character. These examples, however, says Mr. Druery, differ in character from cristate types, and are only akin to the plumose forms of Ferns, in which the extra foliose character is produced by an abnormal continuance of furcate venation carrying the tissues with it. In the Anemone especially the leaf seems incapable of forming a definite terminal growth, and continues developing at the edges until the growing season closes.—ED.]

*On examining a tassel to give the figures it baffled me, for after splitting up into about a score of strands, each of these had a bunch tassel, defying computation.

THE USE OF THE HOE.

It is against the interests of any grower of an outdoor crop to allow the ground he cultivates to remain untouched by the hoe for any length of time. The advice usually given in country districts to "hoe when there are no weeds, you are sure to do so when there are," is worth remembering, for whilst the secondary use of the hoe is to keep down weeds its primary value is to keep the surface of the ground moved. Frequent hoeings during dry weather are equal, if not superior, to a mulching, as the 2 inches deep of surface that is broken and powdered up by constant stirring acts as a mulch and serves to keep the ground cool and moist below. A piece of ground that is not frequently hoed during the summer soon becomes very dry and hard, and if there is a moderately long spell of drought the crop on it soon becomes yellow and starved-looking, due partly to the want of moisture, and in a greater degree to the lack of aeration in the soil. By keeping the surface stirred as deeply as possible with the hoe, the subsoil moisture is drawn upwards by capillary attraction for the benefit of the roots; heavy rains are more easily absorbed by the soil, and the ground becomes aerated and sweetened to the benefit of the crop.

The cost of regular hoeing is an important item, but this is paid for by the increased value of the crop. The cheapest way is to hoe by piece-work at so much per acre, the price varying according to the hardness of the ground and the amount of weeds on it. On light soils the highest price is about £1 per acre, the lowest about 8s.; but on heavy lands the prices may be about 25 per cent. higher. The average cost for a season in the former case works out at £3 to £3 10s. per acre, though the cost may be higher or lower according to the season. This may seem a big price to pay for keeping an acre of ground clean, but it must always be borne in mind that it is not only by the keeping down of weeds, but by increasing the value of the crops, that it more than compensates for the cost of cultivating of the ground.

The benefits of regular hoeing, however, depend to a great extent upon the person using the hoe, and also upon the nature of the ground. The latter has much to do with the manner in which hoeing can be done, heavy, clayey lands

being more difficult to deal with than light, sandy soil, though the benefits to be derived from frequent hoeings are the same in each case. On sandy or gravelly soils the hoe can be used at almost any time, even just after rain; but on close, stiff land, time must be allowed for the water to get away after heavy showers, or the ground will be puddled into a sticky mass unfit for anything. If, however, it is allowed to become too dry after rain before being hoed, it will get so hard that the hoe can make but little impression on it. If cut over with the hoe while it is damp, but not too wet, the ground can be hoed as deeply as possible, breaking all lumps to pieces at the same time, and so forming 2 or 3 inches of fine loose soil on the top, upon which the hoe can play at any time, whether it is dry or not.

Whatever the nature of the ground may be, the first hoeing of the season is an important one, for if this be properly done the ground will be loose and easy for any future working. This is where the personal element comes in, a deep and thorough hoeing being of the utmost importance, and though it may appear a simple thing, deep and regular hoeing is a task that can only be performed well after constant practice. This refers to the use of the draw-hoe, which is the only one that can be used to advantage on large stretches of land. The Dutch-hoe is useful for small gardens, but there is a danger that its constant use will form a hard crust just below the inch or two of surface soil, especially in heavy, or moderately heavy, ground. The draw-hoe, on the contrary, if properly used, breaks the ground differently each time it is used, to the benefit of the crop.

It follows, then, that if the hoe is our best cultivator, care should be taken that it is constantly used, especially during dry weather, always remembering that, as before-stated, the killing of weeds is the secondary consideration, the loosening and stirring of the surface soil being the first. *J. C.*

THE ALPINE GARDEN.

ASPERULA HIRTA.

THE charming little Asperula hirta is in bloom as this is written. It forms one of the most charming of Alpine flowers, and looks exceedingly pretty with its densely-tufted, deep green foliage spangled over with little heads of flowers of a rosy white. When grown in "hard" conditions it is exceedingly neat, and appears less liable to decay than under those frequently recommended for it. Here it is being cultivated on a high and fully-exposed part of my rock garden, sheltered from no wind, and fully exposed to the sun, as well as in a poor, hard and stony soil, such as one finds is appreciated by many Alpines in our moist climate. It is top-dressed, however, with well-decayed turf from the top-spit of very old pasture, and it seems to like this medium in which to form fresh roots. I have cultivated it under conditions which appeared to be more likely to suit, and gave it peat, loam and grit, with shelter from the north and east, and more frequent supplies of water than it has had this year; but it was never healthier or better flowered than it is at present. This little Woodruff is a native of the Pyrenees, and seems, in the drier parts of our islands, to require a moister position than in others. It was introduced in 1817. It is not widely grown, but should be sought after. I should prefer to plant it in July or August to any other time, giving it some shade when newly planted.

THREE NEW RAMONDIAS.

THREE new Ramondias deserve some notice, notwithstanding that they have not as yet attained sufficient size to show their true character, although all are in flower here at present. They are understood to come from an entirely different district from that in which the other Ramondias in cultivation have been found.

One of the best of the three has been named R. quercifolia, from the fancied resemblance of the leaves to those of one or other of the Oaks. It requires some effort of imagination to discover any near resemblance, save in the general outline; but they are, to some extent, lobed, and differ from those of the other Ramondias in form. The flowers are more like those of R. serbica Nathaliæ than would please those who wish a more distinct plant, and in this respect are not sufficiently different except to those particularly interested in the genus.

R. leucopetala is another of these forms, and its chief distinction lies in the colouring of the flowers, although these come near some seedling forms of R. pyrenaica alba. They are pale lilac, with what may be described as streakings or "shadings" of white or paler lilac. The foliage is smaller and less lobed than that of R. quercifolia.

In R. peregrina we have one whose name would lead one to infer that it has a somewhat running habit; but we are not yet in a position to judge as to this, and can only speak of the plant as it appears at present. Its leaves are the smallest of the three, and its flowers, which have been smaller than those of the two preceding, are the deepest in colour of the three, being probably best described by the term deep purple.

It must, of course, be kept in mind that these brief and general descriptions are from pot plants which have only been in my possession for a couple of months or so, and time may modify my impressions of their character. In foliage they come more nearly to R. pyrenaica than to R. serbica, and it is highly probable that they will be recognised by botanists as simply forms of that species. A few plants of R. quercifolia were included in the magnificent exhibit of Messrs. Cutbush at the Temple Show, but they were not shown conspicuously, and probably escaped the attention of many. *S. Arnott, Sunnymead, Dumfries, June 14.*

THE HARDY FLOWER GARDEN.

HYBRID BELL-FLOWERS.

IT would be valuable if Mr. E. Horton, who contributes the very interesting notes on hybrid Bell-flowers on p. 410, would give the authority for the parentage of some of the cross-bred plants which he names. C. × Hendersoni, for example, is, without qualification, stated to have resulted from the crossing of C. carpatica and C. alliariæfolia, but in the earlier editions of his *Dictionary of Gardening* Mr. Geo. Nicholson cites C. carpatica and C. pyramidalis as the parents. At a much later date the *Kew Hand List* gives the same data as Mr. Horton; hence there is reasonable room for doubt. My own knowledge of the plant compels me to adopt the parentage given by Mr. Nicholson, for in the leafage, the greater length of the petioles, and the disposition to form a more than usually woody rootstock, combined with the form of the flowers and the glistening character often seen thereon, are evidences, I think, of the influence of C. pyramidalis. The dwarf habit of the hybrid would suggest C. carpatica as the seed parent. If, however, C. alliariæfolia is one of its parents, such important features as the hoary tomentum, the type of inflorescence, the form of the flowers, and much of the form, as well as the leaf substance, have all been obliterated, which is unusual. For five years in succession I tried to raise a plant from C. carpatica turbinata × C. pyramidalis, and the plant I had hoped to obtain was a dwarfer one than C. × Fergusoni. Imagine my surprise when the only seedling I obtained worth saving was a plant so dissimilar from either parent that one might have imagined it to be a cross between C. pulla and C. rotundifolia. I named it C. × Profusion, in reference to its free-flowering character. In referring to C. × Balchiniana, your correspondent casts a doubt, as I think, wisely, upon the parentage given; and I have no hesitation in saying that I regard this as being no cross-bred plant at all, but simply a well-marked seedling variation. With considerable frequency this plant, or a portion thereof, loses all its variegated character, and assumes what is almost a replica of C. fragilis hirsuta, a variety known and grown thirty-five years ago. There was also a very hirsute form of C. Barrelieri, a plant of freer growth and with larger blossoms than those of C. fragilis. When C. × Mayi first appeared, the distinctly soft and woolly leaves caused much speculation as to their origin, for neither C. fragilis nor C. isophylla—the reputed parents—possessed such leaf characters. I made the following remark that: "If C. fragilis had aught to do with its origin, it was more likely to be through its variety hirsuta than the type." I can see no evidence in this remarkable plant of any influence of C. fragilis. The leaf formation, the petioles, the more abundant habit of growth, the size and form of the flowers, and even the whitish external colouration of the ovary—blush in C. fragilis—all these characters, together with a protuseness of flowering never seen in C. fragilis, point unmistakably to C. isophylla; moreover, there is nothing of the brittle character of C. fragilis in the handsome plant we know as C. × Mayi.

In Van Houtte's Bell-flower there is good external evidence of a plant of hybrid origin, and one has but to recall the stoloniferous shoots of the hybrid to connect it with such a plant as C. punctata, while the slender habit also suggests this species as a parent, although I more than suspect C. latifolia in some form or another of playing a small part in its origin.

In the genus Campanula a rare opportunity is afforded the enthusiastic hybridist, and the rock garden is as open as the herbaceous border to receive good additions of these plants. Readers not having prior experience should know that the anthers in the genus Campanula shed their pollen before the corolla opens. Hence the need for early emasculation and subsequent protection. *E. H. Jenkins, Hampton Hill.*

The Week's Work.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Care of hardy flowers.—Though some gardeners have the idea that after planting there is very little further to be done in connection with this class of plants, it is a mistaken one, for, unless the border is attended to both with care and regularity, no matter in what manner it has been arranged, it soon becomes disappointing. At the present moment there is much to be done on the borders, staking some of the taller-growing plants such as Hollyhocks, Phlox decussata, Gladiolus, Lavatera, etc., which should be done neatly and effectually, and in pegging down others, such as Phlox Drummondii, Verbenas, etc., thinning out the growths of strong growers, cutting off flowers that are over, and keeping the whole border free from weeds. Besides this, many plants require a little special treatment, according to the weather that is experienced. For instance, the Calochortus and Portulacca fare badly when the soil is soddened, and Eremurus blooms should all be guarded from the effects of the rain to keep them in perfection, while, on the contrary, if dry weather is long continued, watering must be resorted to if certain plants are to be sustained in good condition. Again, in addition to the above, arrangements should be always made for filling up gaps that may occur, either by planting out plants that are being reserved in pots, or resowing by some quick-growing annual, according to circumstances. The present and two following months are wonderfully rich in hardy flowers, and during this time the borders ought to be most interesting and attractive.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Peas.—The present season has been a good one for this crop generally, and late Peas promise to be remarkably good. The dry weather, however, if continued much longer, will give cause for anxiety. Plenty of water should be applied at the root and overhead as often as possible. Much more good is done by syringing than is apparent, and if this work is not done, the Pea moth will have every opportunity of puncturing the pods and depositing its eggs: but syringing would dislodge many moths, and so hinder them. The damage done by moths can easily be seen in the pale-green spots on the little pods, and they increase in size as the pods continue to grow. Peas from the latest sowings should be staked early, but at this

season of haymaking, etc., certain items of importance are apt to escape notice until it is too late to remedy the evil. Apply a mulch of long litter or lawn mowings between the lines at the same time.

Leeks.—Plant the main crop of Leeks as soon as the ground can be got into suitable condition. When lifting them for transplanting trim the roots and tops, and dibble them in deeply in lines drawn at one foot apart, allowing a space of six inches between the plants. Ground from which early crops of Potatos have been taken can be profitably used for Leeks. Those required for exhibition will need earthing up from time to time until the stem for about 15 inches is blanched. The earlier this can be done the better, as the more time will be allowed for the stems to thicken. Do not allow any soil to fall in between the leaves, as this cannot be readily got out, and is sure to show itself at a time when nothing of the kind should be apparent. Abundant overhead waterings are advantageous, therefore Leeks grow quickly in autumn when there are heavy dews in the morning.

Celeriac.—Encourage the plants to make good growth by applying a top-dressing, and occasional doses of liquid manure. In order to get fine roots, run the finger round the fleshy part so as to reduce the number of rootlets, when a better and more uniform head will be the result. This is best done when the heads begin to form and when quite young.

Late Savoys are generally of more value than the earlier crop, owing to the scarcity of other vegetables at the time. Make a separate plantation of these as soon as convenient, choosing a hardy, late variety.

Salading Onions.—Make a small sowing of these periodically, as they are very useful in salads. Any surplus seed may be used up in this way through the season.

Chicory.—Complete the thinning of this crop without delay if it has not been done already, as nothing is more injurious to vegetables of this class that depend on their summer development for their later success than the crowding of them together.

Weeds.—The dry weather has been suitable for the destruction of weeds, and it is necessary for all crops to be kept thoroughly clean and the soil well worked between the lines.

THE HARDY FRUIT GARDEN.

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

Early Peach and Nectarine trees that are ripening crops should be given a good watering and some approved fertiliser should be employed. If the trees have been supplied with waterings from the farmyard tanks, they will be swelling their fruits rapidly. Do not syringe the foliage after the fruits commence to ripen. The first variety to ripen is generally Amsden June, closely followed by Waterloo. All early Peaches are unsatisfactory if not severely thinned, there being too much "stone" and too little flesh. Gathering needs to be done with exceeding care, taking them in the palm of the hand, or the fruits will be bruised. Place the fruits in a box or basket containing some fine wood-wool, which is the best material on which to convey them to the fruit room. The shelves in the fruit room should also be covered with a layer of this material. Nectarines do not ripen quite so early as Peaches—Earl Rivers and Cardinal are the earliest varieties, and these are followed closely by Lord Napier.

Strawberries.—Layer runners for subsequent planting out of door, and if sufficiently early they will bear excellent fruits next season; in these gardens we get the finest Strawberries from such plants.

Summer Pruning.—Persevere with the summer pruning of Apple and Pear trees, thinning out the fruits at the same time. The Apple crop being very heavy needs much thinning, or the fruits will be small in size and of bad shape. Large culinary varieties should only have the centre fruit left in each cluster. Blenheim Pippin should be well thinned, as should Cox's Orange, and Ribston Pippins, Peasgood's Nonsuch, Bismarck, Bramley's Seedling, Gascoyne's Scarlet Seedling, and others of the same type. The smaller varieties ought also to be thinned, if only to allow each fruit to become of a proper shape. In all cases where it is possible let trees bearing heavy crops be afforded manure water or a chemical manure.

Bush Fruit.—Gather all small fruits as Currants, Raspberries, etc., as they become fit for bottling or preserving purposes. The fruit should be in a dry condition at the time of gathering. On very light soils Gooseberries need frequent waterings, and occasionally with diluted farmyard manure water.

THE ORCHID HOUSES.

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

Odontoglossum citrosmum.—Now that the flowering season of this species is past, the plants may be repotted or top-dressed, as each may require. Shallow pans are suitable for them, and, being suspended, the flower spikes, which are pendulous, are seen to the best advantage. As a rule the growths produce but few roots, therefore the pans should be small in proportion to the size of the plants, ample drainage should be afforded, and the rooting medium may consist of peat and sphagnum-moss, with a handful of small crocks mixed in to keep it porous. It is advisable to pot rather firmly, as by so doing the pseudo bulbs retain their plumpness better during the season of rest than if the materials are loose. Suspend the plants to the roof of the Cattleya or Mexican house in a light, well-ventilated position. Afford water carefully till the new growths and roots are fully active, but afterwards let abundance of water be given until growth is fully made up.

Cattleyas.—C. Dowiana, C. D. aurea, C. Gaskelliana, C. labiata and C. guttata Leopoldi have made considerable progress with their new growths, and many flower sheaths are noticeable. While in this stage care should be taken that water is not allowed to remain in the growths. The plants will require considerable water at the root until the flowers are open when less will suffice. Such Cattleyas as C. Mendeli, C. Mossiæ, C. Skinneri, C. intermedia, C. Lawrenceana, C. Schroderæ and C. Warneri, also many hybrid Cattleyas, Lælias, Lælio-Cattleyas, &c., will require attention as regards repotting, &c., full instructions for which were fully given in my *Calendar* for May 5, p. 278. Plants of Cattleya gigas may also be repotted when they have passed out of bloom, as very soon after this the current season's growth will send out from their base a large number of roots that will at once enter the new potting compost, and thereby become quickly re-established. This work should not be delayed, as after the roots start, any disturbance of the compost is attended with danger.

Lælia purpurata and L. tenebrosa should be placed in a cool, well ventilated part of the house, affording just sufficient water at the roots to keep the pseudo-bulbs plump, but nothing should be done that will induce the growths to start, as the earlier growths are seldom satisfactory, whereas the late summer and autumn growths are stronger, and invariably produce flower sheaths at the proper season. Lælia Dormaniana, L. Perrini, L. elegans and Lælio-Cattleya Schilleriana may be repotted if necessary, afterwards affording them generous treatment. Cattleya Bowringiana has begun to make new growths and should be elevated well up to the light, and where there is a good circulation of air. The plant should not be disturbed now, the proper time for repotting being soon after the flowering stage, as it is then that the new pseudo-bulbs produce most roots.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Need for top dressings.—Any specimen plants which have not been repotted for a season, whose roots are in a healthy and active condition, would (in most cases) derive much benefit from a top dressing with decayed cow manure and the siftings of charcoal and sand. The young roots would soon push into this material, and plants advancing in the flowering stages would show a marked improvement from this increase of root action.

Hard wooded plants out of doors.—Although a sheltered position has been chosen, a little extra care will be necessary in securing such plants as Azaleas, Heaths, Camellias, and greenhouse Rhododendrons from the effects of strong winds. If stood on a bed of coal ashes and made perfectly level, they may be safely ensured by driving down three strong stakes sufficiently deep in the ground and close to the rim of the pot; this should be done as each plant is placed in position, and there will then be no further need for anxiety. Syringing with water overhead each day will keep the surroundings cool during hot, dry weather. The plants generally will then be improved by the outdoor treatment. Spray the plants occasionally with XL-All insecticide, as thrips are usually troublesome on plants placed outside. Considerable care is needed to prevent greenhouse Rhododendrons that have completed their growth from starting again; they are much more liable to do this than either Azaleas or Camellias, and although they enjoy a liberal quantity of water at their roots, they should not be allowed to become saturated either from the water pot or heavy rains. Lapagerias may also be placed out of doors in a shady position, and as they are now approaching their flowering stage, the substance and colour of the flowers will be improved; afford water freely to the roots, and a weak stimulant may be applied at every alternate watering.

General remarks.—Now that most of the plants have been repotted, the work in the houses will consist of the tying and staking of plants, and in keeping everything in a state of perfect cleanliness. In the staking of plants use stakes which have been previously painted, and as few of these as possible, so that the plants may have a natural appearance of growth. Bamb o canes can be had in various sizes, and are the most economical to use, hence there is no excuse for having plants roughly staked. Propagate the young growths of choice varieties of Pelargoniums by placing them singly in small pots, and putting them in a frame in which the atmospheric temperature is 55° to 60° during the day; afford a little ventilation at night, and see that the cuttings are kept free from aphis.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Tomatos.—The first batch that was planted in the final pots in the early part of February and have since grown in a warm house will now have finished fruiting. If plants are infested with the white fly, they should be carefully cut out and taken to the fire heap. Any fruits that are still green may be cut and placed on shelves in a warm house to ripen; they will be very useful for the making of soups, &c. Successional plants succeed much better when planted out in narrow borders, or even in wooden boxes made about 8 inches deep, a foot wide, and 3 or 4 feet long, according to the amount of space at disposal. Plants that have set their fruits should now be given a top dressing of loam, with a little bone meal mixed with it. Tomatos are very fond of bone meal, also diluted liquid manure, and soot water occasionally. Continue to keep all side growths pinched out, and when the fruits are ripening, some of the foliage should be cut away, in order that air may the better circulate about the plants. Those plants at present in flower may be given a gentle tapping each day, to assist the distribution of the pollen, and therefore the pollination of the flowers. Some varieties set their fruit much more freely than others; such, for instance, as Duke of York, Vick's Criterion, Northern Beauty, and The Peach. "The Peach" is delicious for dessert, but is only small in size. If good-sized Tomatos are required for exhibition purposes, the bunches should be thinned out freely while in their early stages of growth.

Strawberries.—Young plants that were layered into 3-inch pots early last month should now be in such a condition that they may be severed from the mother plants without suffering injury. They should be brought from the beds and be placed on the sides of the garden paths, or, if it is very hot, plunged in fine ashes. In this position they will succeed very well until they are ready for putting into the pots in which they will fruit.

Cape Gooseberries.—If ample accommodation exists in the fruit houses, these should be planted out at once. But where room is limited a few can be grown in 9- or 10-inch pots, using rather poor soil, or the plants might make too much growth, but set very few fruits. The fruits are very pretty when ripe, and the flavour is somewhat peculiar. The plants require plenty of sun, light, air, and water.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	July 14	Glasgow Fair. Dutch Gardeners' Soc. meet.
TUESDAY,	July 17	Roy. Hort. Soc. Coms. meet. Roy. Scottish Arboricultural Soc. Exh. at Peebles (4 days).
WEDNESDAY,	July 18	Nat. Rose Soc. & Roy. Caledonian Hort. Soc. combined Exh. at Edinburgh. Glasgow Fancy Sh.
THURSDAY,	July 19	Newport Fl. Sh. Rochampton Cottage Fl. Sh. at Dover House. Dunfermline (Carnegie Trust) Fl. Sh. (2 days). Great Yarmouth Fl. Sh.
FRIDAY,	July 20	North Lonsdale (Ulverston) Rose and Sweet Pea Exh.
SATURDAY,	July 21	German Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick: 63.4

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, July* 11 (6 P.M.): Max. 68°, Min. 53°

Gardeners' Chronicle Office, 11, Wellington Street, Covent Garden, London. *Thursday, July* 12 (10 A.M.): Bar., 30·1; Temp., 65°; Weather—Fine.

PROVINCES.—*Wednesday, July* 11 (6 P.M.): Max. 61°, England, South-east; Min. 54° Ireland, North-east.

SALES.

FRIDAY—

Importations of Orchids, Established Orchids, Cycas revoluta, also retarded bulbs and roots, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Summer Show of the Royal Horticultural Society.

Holland Park has one great advantage over the Temple in the greater space available, and, consequently, in the enhanced comfort of exhibitors, exhibits, and visitors. The R.H.S. is thus under a great obligation to Mary Countess of Ilchester for the privilege of holding its show in the paddock fronting the picturesque and historic mansion known as Holland House. The Temple is rich in historic associations, but it may be doubted whether the average flower-show visitor pays much heed to far-off abstractions of that kind. At Holland Park the open space and the delightfully picturesque mansion compel attention, even from the most thoughtless. Entering direct from the busy thoroughfare of the Kensington Road to the avenue of Elms with an undergrowth of Foxgloves, Campion and the ripening capsules of the Wood Hyacinth, it is impossible for the moment for the visitor to realise that he is still in the midst of London. At this season the foliage is attractive, but a second glance shows only too plainly that the trees have passed their best and that the Elms are experiencing the effect of London atmosphere and excessive drainage, whilst the once noble Cedars are spectral monuments of bygone stateliness. But on a fine July day and on such an occasion there is no need to dwell upon anything but the excellence of the show and the beauty and interest of its surroundings. From the full report given on another page it will be seen that the great summer show of the R.H.S. was as attractive as any of its predecessors, although we cannot indicate any particular exhibit as standing out prominently by reason of its novelty or interest. The ordinary flower-show visitor, however, would not have noticed the deficiency, so entrancing was the feast of beauty laid out for his delectation.

The luncheon given by the council to the members of the several committees and the judges was a pleasant function. The friendly gathering and the recognition thus afforded by the governing body of the disinterested labours of the committees all through the year do much to promote mutual understanding and goodwill, and if congratulations were freely exchanged between the President, as the mouthpiece of the Council, and the representatives of the committees and judges, as voiced by Sir Michael Foster, Sir John Llewelyn, and Mr. Challis, those congratulations were amply justified.

The Meteorological Society had an interesting exhibition hard by, but we venture to think that anyone conversant with the affairs of the R.H.S. would hardly need to inspect the instruments to realise that for the present the indications are "set fair."

But the Meteorological Society's display did not constitute the only collateral subject of interest. By the thoughtful kindness of Mary Countess of Ilchester the private gardens of Holland House were thrown open for the inspection of visitors on payment of a small fee, the proceeds of which are to be devoted to the gardening charities. Judging from the numbers of persons we saw availing themselves of this privilege, the charities should benefit substantially, and, as to the visitors, they must have been obtuse indeed if they were not charmed with the delicious old-world garden, and the varied outlines of the grey mansion, with its gables and turrets, its projecting bays and deep recesses. How often have we heard the lament that it is impossible to grow Roses in London? Those who saw the long double border of Caroline Testout Rose in full beauty in the garden at Holland House were literally amazed, and the wonder was not confined to the casual visitor, but found expression even from expert cultivators, whose experience is gained in country parks and gardens far removed from the untoward climatal surroundings entailed by a London atmosphere. Holland House gardens, too, furnish an object-lesson to controversialists prone to wrangle over the comparative merits of the formal and the natural style of gardening. We do not think the most rabid opponent of the formal style could object to the quaint Elizabethan flowerbeds so thoroughly in keeping with the architectural features around them, nor can we conceive the most ardent devotee of formalism finding ought to object to in the shrubbery walks, the dells, and other features of this delightful garden lying between the vast highways of the Hammersmith Road on the one side and the Bayswater Road on the other. Flower shows come and go and repeat themselves, but the charm of a house and garden like Holland House is perennial and persistent.

OUR SUPPLEMENTARY ILLUSTRATION this week shows how a flat, monotonous surface may be broken up and converted into a rocky, fern-lined dell through which a cascade comes tumbling over the rocks as if to the manner born. The "formal" gardener may scoff at the artificial dell and the sham rocks. Let him indulge his artistic taste if he will, but let him not attempt to deprive others of efforts which are in every way as charming as those of the best designed terrace garden. We do not know what were the conditions in the Torquay garden, shown in our illustration, before Messrs. PULHAM took it in hand, but our readers can see for themselves what a beauty spot they have created, and the gardener and the botanist can readily appreciate the opportunity offered for the protection and culture of their favourite plants.

THE BOTANICAL MAGAZINE.—The July number contains coloured illustrations of the following plants:—

EUPHORBIA PROCUMBENS (*Miller*), tab. 8,082.—A very curious dwarf Spurge with short, thick, succulent, spineless stem and numerous spreading branches, short, curved, subulate leaves, and heads of yellow flowers, provided with thick scarlet, kidney-shaped glands. The figure is taken from a plant in the collection of Mr. JUSTUS CORDEROY, here described by Mr. N. E. BROWN.

DEUTZIA WILSONI (*Duthie*), tab. 8,083.—A handsome species collected for Messrs. VEITCH in Western China by Mr. WILSON. The leaves are broadly lanceolate, sharply toothed; the numerous white flowers are terminal, much branched panicles.

PAPHIOPEDILUM GLAUCOPHYLLUM (*J. J. Smith*), tab. 8,084.—A species allied to P. (Cypripedium) Chamberlainianum, but differing in its broader, self-coloured, glaucescent leaves and pubescent petals. It is a native of Java. The plant figured flowered at Kew, and is described by Mr. ROLFE.

GURANIA MALACOPHYLLA (*Barbosa Rodrigues*), tab. 8,085.—A climbing, tendril-bearing Cucurbit, with soft, cordate, ovate leaves, and heads of scarlet flowers on long axillary stalks. The specimen was sent to Kew by Mr. ED. ANDRÉ, who originally described the plant in the *Revue Horticole* 1904, p. 388, as G. eriantha, but G. eriantha, as pointed out by Mr. SPRAGUE, has spicate, not globose inflorescence.

GENISTA CINEREA (*De Candolle*). tab. 8086.—A shrub, native of the West Mediterranean region, with ascending, slender, silky branches, and linear leaves. The papilionaceous flowers are yellow and disposed along the ends of the branches; Kew. The plant is described by Dr. STAPF.

THE TEMPLE SHOW.—The average Briton is aware of his lack of taste in decoration, and of his inability to compete with Frenchmen and Belgians in this particular. The *Revue de l'Horticulture Belge* takes exception to the arrangement of the exhibits of the Temple Show, where, although space is so precious, far more variety might be introduced in the staging and grouping. "The exhibition of this year," says the writer, "differed but little from its predecessors. The tents in their old places, the same arrangements of the exhibits, all show no desire to produce a good general effect. In this respect the shows of the Société Nationale d'Horticulture de France and the Ghent Quinquennials are far in advance." The English are men of business essentially and expose their exhibits to attract clients. If their plants were arranged more tastefully and artistically and temptingly it would be a gain to trade exhibitors. What is especially required is a larger and more suitable exhibition ground, as the number of entries increases yearly." We must all acknowledge the justice of these criticisms, the more so, as we know, more fully than our Belgian contemporaries can do, the reasons for the deficiencies he points out.

HORTICULTURAL CLUB.—The annual excursion will take place on July 26, when the members will leave the Great Central Railway Station (Marylebone) by the 10.5 train, arriving at Wendover at 11.12, where brakes will be in readiness to convey the party to Halton, the beautiful country seat of ALFRED DE ROTHSHILD, Esq., who most kindly provides luncheon. In the afternoon the party will drive to Tring Park (three miles), where, on the kind invitation of Lord ROTHSCHILD, tea will be provided, after which the gardens will be visited, and also the museum of the Hon. WALTER ROTHSCHILD. The return train leaves Wendover at 7.45 for, Marylebone. The inclusive cost of each ticket will be 11s. 6d. Those wishing to be present will kindly send their names, on or before July 16, to Mr. HARRY J. VEITCH, East Burnham Park, Slough, who is undertaking the necessary arrangements.

NATIONAL ROSE SOCIETY'S NORTHERN SHOW, EDINBURGH.—We are asked to state in connection with this show, which will be held on July 18, that the Great Northern Railway will issue special cheap tickets at the reduced fare of £2 0s. 10d. third class, and £3 11s. first class return from King's Cross, available for three days, with sleeping accommodation to be attached to the 8.45 p.m. train on July 17. Early application to Mr. C. C. DANIELS, Chief Passenger Agents' office, King's Cross, is particularly requested. Anyone forming a party of five can join this train at any stopping place, but to obtain the reduction tickets must be applied for beforehand as above. Any further information can be obtained of H. E. MOLYNEUX, hon. treasurer, National Rose Society, 80, Cannon Street, E.C.

SIR DANIEL MORRIS.—What may be done by energy, ability, and perseverance is well illustrated by two votes of thanks which we find recorded in the *Agricultural News*. When fungoid disease destroyed the crop of Sugar Canes in Barbados, it was suggested that an alternative industry should be started. Every one agreed that it was desirable, but few thought it was practicable.—"But through the energy and tact displayed by Sir DANIEL MORRIS and his staff, we have" (says a speaker at the conference of cotton growers) "an alternative and a paying industry." A vote of thanks was passed unanimously. In the same periodical, a few pages further on, we find that the clergy of the Church of England in the island of Antigua assembled at a clerical meeting resolved formally: "That the work in connection with the agricultural education in secondary and elementary schools which has been developed and fostered by the Imperial Department of Agriculture in the island of Antigua, has been of great benefit to the schools and education generally: That the work now being done is likely to lead to good results in the future: That their grateful thanks are hereby tendered to the Imperial Department of Agriculture for their valuable help in the past, and it is hoped that every effort may be made to continue the work on the present lines." Sir DANIEL'S advice would be valuable in securing the passage of the Education Bill in such a shape as to be satisfactory to all parties!

"REWARD" STRAWBERRY.—Messrs. LAXTON BROTHERS have sent us samples of their new Strawberry bearing the above name. The "fruits" are of variable size, the largest measuring $1\frac{3}{4}$ inches in the longest diameter. In form they are variable, some being conic, others flattened and spade-shaped. The colour is crimson and the carpels (so-called seeds) are slightly embedded, and distributed over the whole surface of the "fruit." The flesh is firm, solid, deeply coloured, rich and slightly acidulous in flavour. We know nothing of its cropping qualities, but judging from the samples sent, it travels well and amply deserves the Award of Merit it received from the Royal Horticultural Society.

PARIS MUSEUM OF NATURAL HISTORY.—M. P. H. LECOMTE has been appointed Professor of Systematic Botany in place of M. BUREAU resigned.

POSTAL CHANGES.—The following reductions of postal charges are now officially announced:—Money orders payable abroad.—The poundage charged on money orders issued in the United Kingdom for payment abroad for sums not exceeding £1 is now reduced from 4d. to 3d. Postal orders.—The poundage chargeable on certain values of postal orders is reduced from the present time, as follows: On orders for 2s. and 2s. 6d. the charge is ½d. instead of 1d.; on orders for 11s., 11s. 6d., 12s., 12s. 6d., 13s., 13s. 6d., 14s., 14s. 6d., and 15s. the charge will be 1d. instead of 1½d. Parcel post.—The rates of postage for inland parcels exceeding 4 lb. in weight is reduced: Not exceeding 1 lb., 3d.; exceeding 1 lb. and not exceeding 2 lb., 4d.; exceeding 2 lb. and not exceeding 3 lb., 5d; exceeding 3 lb. and not exceeding 5 lb., 6d.; exceeding 5 lb. and not exceeding 7 lb. 7d; exceeding 7 lb. and not exceeding 8 lb., 8d., exceeding 8 lb. and not exceeding 9 lb., 9d.; exceeding 9 lb. and not exceeding 10 lb., 10d.; exceeding 10 lb. and not exceeding 11 lb., 11d.

HOME CORRESPONDENCE.

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

EXHIBITING VEGETABLES.—In reply to Mr. J. A. Simpson (p. 8), if I were called upon to judge the varieties mentioned, each would receive credit, but if the schedule read—six distinct kinds of vegetables, with no other remarks, and Parsley in a pot was included, I should at once disqualify the exhibit as I do not consider Parsley a vegetable, and it should only be included in collections of herbs or in separate classes set apart for it. Much as I have admired the pots of beautiful Parsley exhibited in Scotland in the separate classes, I think the schedule should stipulate for one plant only and not for one pot, which is very misleading, as it may contain two or more plants. I also consider the varieties or kinds as mentioned by Mr. Simpson a very weak set; and, further, would any judge, providing Parsley were allowed by the wording of the schedule, give it the preference to a good dish of Carrots or Celery? *W. J. Pritchard, Elstree.*

GARDENERS' ROYAL BENEVOLENT INSTITUTION AND ROYAL GARDENERS' ORPHAN FUND.—I beg to call your attention to a special effort that is being made locally in Derbyshire to aid the funds of these two societies. It is proposed to hold an exhibition and sale by auction at the Auction Mart, Derby, on Wednesday, August 1 next, for which gifts are solicited of plants, flowers, fruit, vegetables, or any other articles. At this season when there is such a profusion of garden products, I trust this appeal will meet with a generous response, feeling certain that all who are interested in gardening will readily give of their abundance to assist those whose past efforts have yielded so much to their pleasure. To enable the matter to be properly advertised, I would ask intending contributors to forward particulars of their gifts without delay, so that proper arrangements can be made. All plants, &c., should be delivered here on the day prior to, or not later than 9 a.m. on the morning of, the exhibition. The perishable nature of these articles renders an earlier sending unadvisable. The use of three spacious sale rooms has been given free of cost by Messrs. Galbraith, Bethune & Co., Ltd., who have also offered to conduct the auction sale and give their fees to the funds. A great expense has thus been saved, and the only costs to be defrayed are those of advertising, &c. The entire proceeds will be equally divided between the two societies. The exhibition will be opened at 10.30 a.m. on Wednesday, August 1. The sale by auction commences promptly at 2 p.m. Admission tickets (6d. each) can be obtained on application. Programmes giving the names of donors and particulars of their gifts will be printed in due course, price 3d. each. A limited number of advertisements can be inserted. Notice of contributions will be gratefully received and acknowledged by the local honorary secretary, Mr. W. H. Cooke (gardener to the Rt. Hon. Lord Belper), Kingston Hall Gardens, Derby; or by Messrs. Galbraith, Bethune & Co., Ltd., Auctioneers, Surveyors and Land Agents, Market Place and Derwent Street, Derby, from either of whom tickets and all further information can be obtained. *R. T. Bethune.*

CARTER'S MONARCH STOCK.—A new and very fine strain of Ten-week Stock is Carter's Monarch. Our trial proves that it comes into bloom particularly early, and the great length of spike favours a continuance of blossom for a long period. Its fragrance, which at any season is most refreshing and agreeable, fills the air during the early morning and evening. The immense size of individual pips, together with the unusual length of spike, makes a bed of these plants very effective, and certainly for the flower basket they possess considerable value in early summer. The seeds were sown in March, and seedlings planted out early in May provided a good display in June. Many visitors who have inspected them agree that the strain is an excellent one, the bold spikes, vigorous constitution of the plant, and purity of its colour making an impression that will probably remain for some length of time. As with all other Stocks there is a proportion of single flowers, but the percentage is below the average. It would seem that the new Monarch is a glorified form of the now well-known and popular Princess Alice—a favourite Stock with everyone. *W. Stugnell.*

THE WEATHER IN THE NORTH.—After some very fine dry weather, lasting from June 6 till June 27, the weather in the north-eastern counties underwent a remarkable change, with disastrous results to many tender plants in fields and gardens. Slight frosts were experienced from June 28 to July 2, that of the morning of July 1 being the most severe, 1° being registered in a Stevenson's lowered screen, which means at least 3° of ground frost at this season of the year. A cold northerly wind helped to accentuate the evil wrought amongst tender plants. Potatos were badly blackened in places. Kidney Beans suffered very much, also Begonias, Ageratums, Dahlias, and other bedding plants. I very much fear that Strawberries in full flower, and also Raspberries in the same condition, have been badly injured. These two crops looked remarkably well previously and were quite a contrast to several other fruit crops this season, such as Plums and Cherries, which are absolute failures. Gooseberry crops are under the average, while Currants are full crops. The Apple crop will, I fear, be a very light one. This may be the effects of the cold wet autumn of 1905, followed by similar conditions in spring, which culminated in a rainfall during May of 5·78 inches, with an extremely low temperature. The month of June was very dry. Vegetable crops, though late, are looking well. As a result of the recent frosts, the common bracken (Pteris aquilina) has also been blackened, showing in a marked degree the unusual nature of the recent meteorological conditions in Ross-shire. *W. Laing Mutty, Ardross, Alness, N.B.*

SOCIETIES.

ROYAL HORTICULTURAL.

SUMMER SHOW AT HOLLAND HOUSE.

JULY 10, 11.—After an interval of one season, when the Royal Horticultural Society held its summer show in the grounds attached to the Royal Hospital at Chelsea, the Society was again privileged to visit Holland Park, Kensington, on the above dates. On former occasions it has been obvious to everyone attending these shows that no situation in London could possibly be more suitable for the holding of a horticultural exhibition than the grounds attached to this fine old residence at Kensington, and on the present occasion the scene appeared brighter and more glorious than ever. The weather was fair, if not fine, and the number of visitors appeared to be much larger than at previous exhibitions, whilst the exhibition itself was quite as attractive as previous ones have been.

Orchids, though less numerous than at the Temple Show, made a good display, and the ORCHID COMMITTEE recommended four First-Class Certificates, one Botanical Certificate, and six Awards of Merit.

The FLORAL COMMITTEE had a large number of novelties to inspect, and amongst the awards

were one First-Class Certificate and ten Awards of Merit.

The FRUIT AND VEGETABLE COMMITTEE did not make any award to a novelty.

There was a large attendance at the luncheon, at midday, when SIR TREVOR LAWRENCE presided, and was supported by Sir J. T. D. Llewelyn, Sir Michael Foster, Sir Daniel Morris, Captain Holford, and most of the members of the Society's committees.

The arrangements for the show, which certainly involve considerable extra work on the part of the secretaries and upon Mr. S. T. Wright, Mr. Frank Reader, &c., were satisfactory.

Owing to the kindness of Mary Countess of Ilchester, the private gardens were opened to the public for the benefit of the two gardening charities. The charge made for admission was one shilling, and we believe that a sum of £156 12s. was thus realised.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. J. F. McLeod, Amos Perry, C. T. Druery, T. W. Turner, W. P. Thomson, W. Bain, C. R. Fielder, W. Howe, R. Wilson Ker, C. E. Shea, Geo. Nicholson, Jno. Jennings, G. Reuthe, R. C. Notcutt, R. W. Wallace, A. R. Goodwin, M. J. James, Ed. Mawley, W. G. Baker, Jno. Green, Chas. Dixon, F. Page-Roberts (Rev.), Geo. Paul, H. J. Cuthbush, C. J. Salter, H. J. Jones, Chas. Jeffries, H. B. May, Jas. Walker, W. Barr, J. W. Barr, and R. Hooper Pearson.

ROSES.

Messrs. BEN R. CANT & SONS, The Old Rose Gardens, Colchester, staged a beautiful lot of garden Roses, and boxes of specimen blooms, principally H. T. and T. varieties. Countess of Derby is a new H. T. The flower is of good shape, the colour being cream, tinted with faint rose. The new seedling, Mrs. O. G. Orpen, was prominent in several vases. Lucy Carnegie, although small, is a charming flower, the sulphur-coloured centre being set off with outer rosy petals. Well-known varieties occupied the exhibition boxes.

The KING'S ACRE NURSERY CO., Hereford, showed a charming exhibit of Roses. They had bunches in vases at the back, and boxes containing larger blooms in the front. Such beautiful varieties as Bessie Brown, Ulrich Brunner, Killarney, Mildred Grant, and Mrs. R. G. Sharman Crawford were shown in exhibition style, while at the background were Rambler and Polyantha varieties arranged in pyramidal shape.

Messrs. WM. PAUL & SON, Waltham Cross Nurseries, Herts, made a beautiful display of Roses in a corner of one of the tents. The great poles, covered with such fine Roses as Waltham Rambler, Crimson Rambler, Sweetheart (Wichuraiana), and other varieties, were extremely effective, and cut flowers of Hybrid Tea and other exhibition Roses were shown in baskets and other receptacles, in which they were massed in bunches.

One of the most delightful ground exhibits in the large Orchid tent was one from Messrs. R. & G. CUTHBERT, Southgate Nurseries, Middlesex. It was composed of Rambling Roses, including Lady Gay, Hiawatha, and most of the novelties we have seen in this section of Roses. The plants were arranged thinly, and between them was a miscellaneous collection of plants in flower, including hybrid Verbenas in the newest varieties, Lilium longiflorum, L. auratum, L. speciosum, L. giganteum, Hydrangea Hortensia, Ivy-leaved and zonal Pelargoniums, Lilies of the Valley, and other species. The effect was brilliant and varied.

Messrs. HOBBIES, LTD., Dereham, Norfolk, had an exhibit of Roses which was remarkable for the pretty standards of Wichuraiana and Polyantha varieties which it contained. These standards had an effect similar to that of a bouquet. In other forms were Hiawatha, Lady Gay, Dorothy Perkins, &c., and very fine blooms of the varieties Frau Karl Druschki and Mildred Grant.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, also had a corner exhibit in the large tent, and arranged their display of Roses much in the same manner as the firm is in the habit of doing at the Temple Show. Both the plants and the cut flowers were excellent in quality, and they had a pretty effect. Many of the cut flowers were arranged in small, green bucket-like receptacles, and appeared at first sight to be well-flowered dwarf plants of the varieties represented.

Messrs. ALEX. DICKSON & SONS, Newtownards, co. Down, showed vases of Roses, some of which were new varieties, that named Mrs. Jardine receiving an Award of Merit. The "single" Irish Elegance was much admired.

Messrs. FRANK CANT, LTD., Braiswick Rose Gardens, Colchester, showed Roses that were of superb quality. Among the more notable blooms were Liberty, Prince de Bulgarie, Mdme. Moreau (gold and rose), Irish Engineer, and Irish Beauty (carmine and white respectively), Killarney, and Florence Pemberton.

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, occupied much of the central tabling in one of the large tents with an array of hardy flowers and Roses. The border flowers were a representative lot, and embraced many new and choice varieties. Among the Roses was a magnificent box of Mildred Grant. An epergne of the white Maman Cochet was also very fine.

Messrs. GEO. COOLING & SONS, Bath, exhibited a nice collection of Roses. Sprays of Rambler varieties hung over from the back, the small white Rover's Musk formed a plume of Roses, with vases and boxes of larger-flowering kinds, such as Hugh Dickson, Mrs. W. J. Grant, Capt. Hayward, Killarney, Comtesse de Nadaillac, and Souvenir de Catherine Guillot, all in capital form.

A small group of Roses came from Mr. ERNEST E. GRIMSON, York House, Sutton.

BEGONIAS.

Messrs. BLACKMORE & LANGDON, Tiverton Hill Nursery, Bath, staged a beautiful exhibit of tuberous-rooting Begonias. The flowers were very large, of first-class form, and they showed exquisite colourings. Many new varieties were shown, Purity being one of the best (fig. 18), Mrs. G. Fry has large petals of a clear salmon shade; Beatrice has wavy petals, which are pale yellow at their base, passing to a pale-salmon tint. Miss Dorothy Hardwick, Percy Foster (scarlet), Mrs. W. L. Amslie (yellow), and Mad. A. Patti (of the Picotee type) were all notable varieties in this exhibit.

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent, exhibited a beautiful batch of tuberous-rooting Begonias, single and double varieties being about equally represented. Among the double forms notable varieties seen were Mary Pope (white), Margaret Gwillim (yellow), Morning Star (a new white variety), and Pride of Eltham (rich primrose).

Messrs. JOHN LAING & SONS, Forest Hill, London, showed many single and double-flowered varieties. Yellow, pink, salmon, white, scarlet, and other shades were seen, the flowers being very showy. Lady Sefton (rosy pink), Lord Craven (a deep scarlet, almost crimson, shade),

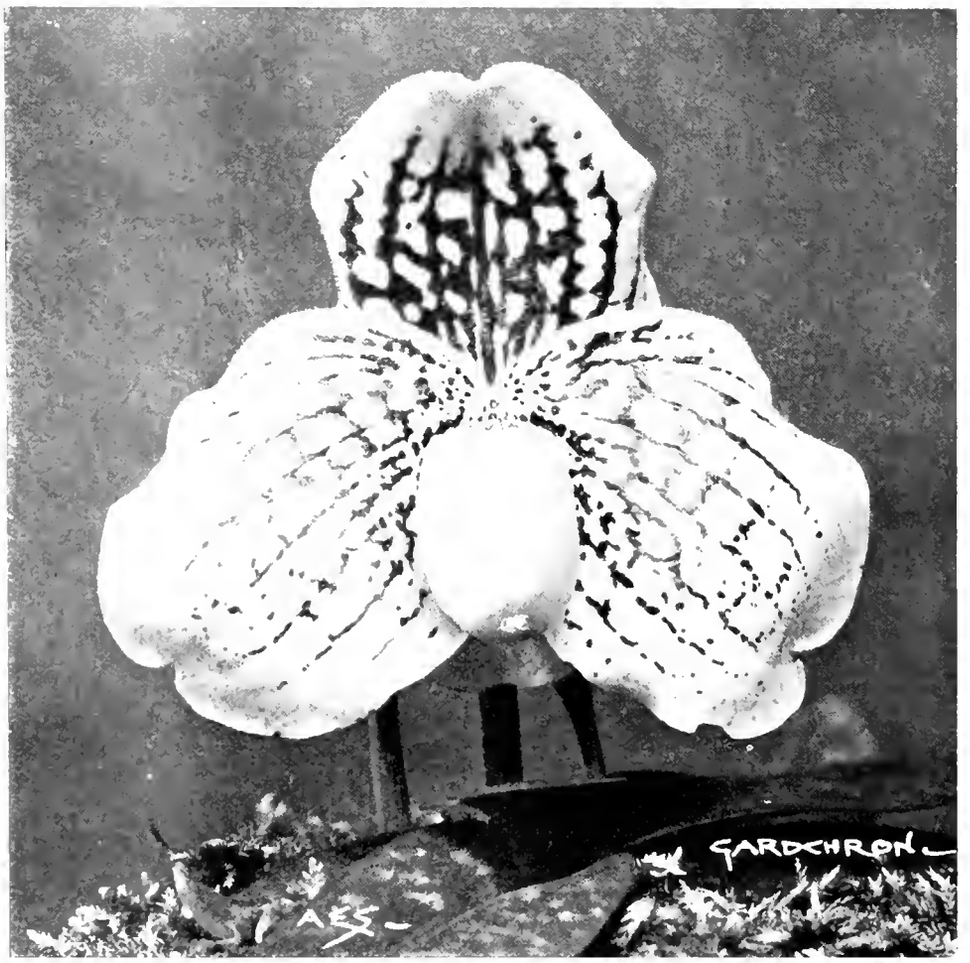


FIG. 16. CYPRIPEDIUM GODEFROYI VAR. HODGKINSONI.
(See Report of the Holland House Show, p. 36.)

and Mrs. Arthur Hall (soft salmon) may be mentioned as varieties of merit.

Messrs. THOS. S. WARE, LTD., Ware's Nursery, Feltham, showed tuberous-rooting varieties of much merit. The flowers were very large and the plants well grown. The beautiful shades of colours common in this plant were well represented—soft shades of salmon, seen in John Peed, Duchess of Connaught, Mrs. W. H. Edwards (with white edging), scarlet, as in William Marshall, King Edward VII. (new), and George Pike, white and blush, well shown in Mrs. W. H. Edwards, Mary Pope, Countess of Ilchester, &c.

SWEET PEAS.

Messrs. G. STARK & SON, Great Ryburgh, showed about 40 varieties of Sweet Peas, and variegated Nasturtiums, labelled Stark's Hybrids. A new carmine-coloured Sweet Pea was shown under the name of George Stark.

E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. Thos. Stevenson), showed a nice assortment of Sweet Peas in about 40 varieties.

Sweet Peas in variety were also shown by Mr. Ernest Poupart, Twickenham.

Mr. Henry Eckford, Wem, Shropshire, showed flowers arranged in vases. He staged the new variety Horace Wright, also Henry Eckford, whose shade of colouring is unique; Miss Willmott, Queen of Spain (new, the shade is flesh colour), Maud Guest (new), &c.

Messrs. John King & Sons, Coggeshall, displayed a large number of Sweet Peas in most of the newer and better varieties.

Mr. C. W. Breadmore, Winchester, showed vases of Sweet Peas. They had the new varieties Miss Audrey Crier, Elsie Herbert, Etta Dyke, and Dora Cowper, all of which are described on p. 38. Helen Lewis, the medal flower of last year, Mrs. W. Wright, Henry Eckford, Miss Willmott, &c.

Messrs. Carters, High Holborn, London, displayed vases and epergnes of Sweet Peas in great variety.

Hardy Flowers.

Messrs. Gunn & Sons, Olton, Birmingham, displayed about 30 varieties of Phlox decussata. The spikes were cut with long growths that enabled them to be arranged to great advantage. Josephine Gerbaud, Eugene Iris, Coquelicot, Espérance, and [illegible] are the more notable varieties.

Mr. Amos Perry, Winchmore Hill, London, N., made a fine display with water-loving and bog plants, and in which the endless variety of tints seen in Grasses, Bamboos, Typhas, Rushes, Eulalias and other tall foliage plants were shown to advantage. Gunneras, Ferns, Spiraeas, Iris Kaempferi, a notable feature, Water Lilies, which were resplendent with beauty, and a representative collection, all contributed to a charming display, suggestive of much that could be done in the garden on similar lines.

In the open Mr. Perry arranged a very fine group of herbaceous plants.

Mr. G. Reuthe, Keston, Kent, staged an interesting lot of plants—hardy Heaths, [illegible] choice flowering shrubs, Eremuri, Rhododendrons, Ixias, and many others. The [illegible] Campanula Moerheimi was especially good.

Gaillardias and Delphiniums from Messrs. Kelway & Sons, Langport, Somerset, made a very fine display. Notable varieties of the [illegible] [illegible] Edward VII. (deep violet, with white centre), Countess of Ilchester (pale blue and white), and John Thorpe.

A fine group of border Carnations in pots was exhibited by J. A. Young, Esq., [illegible] (gr. Mr. G. H. Street). The group [illegible] [illegible] selfs and yellow-ground [illegible] a few "Malmaisons." The plants [illegible] culture.

Messrs. Wallace & Co., [illegible] distributed a rock water garden [illegible] border flowers. [illegible] good Lilies in large groups, such as L. [illegible] and L. splendens, L. Henryi, L. Humboldtii, a

Fig. 17.—Rose Queen of Spain: flowers flesh-coloured, fading to cream. Obtained an Award of Merit at the Holland House Show (see p. 35).

fine mass of L. candidum, and many others. The Lilies were especially good and fresh-looking, and formed a feature of the exhibit; the Irises were also well shown, the rich colours of the Japanese kind were well seen amid the green of Bamboo and Eulalia and other similar things.

Water Lilies were very pretty and nicely grouped, while the rockery contained a choice assortment, notably of Calochorti.

Mr. M. FRICHARD, Christchurch Nurseries, Hants, contributed a brilliant display of hardy flowers, among which varieties of Japanese Irises (I. Kæmpferi) were most attractive. Some of the Delphiniums shown were of extra good quality, particularly the variety named "Magnificent." Alstrœmerias, Hemerocallis, Eremurus Bungei, and wonderful flowering growths of Ostrowskia magnifica were included amongst many other varieties of border flowers.

Mr. B. LADHAMS, 60, High Street, Shirley, Southampton, showed border flowers. The White Campanula alba coronata attracted attention. Hemerocallis Thunbergi, Armeria rubra, Centaurea Wiedmanni, Gaillardias (of many shades), and perpetual flowering Pinks, were all well shown.

MARY Countess of ILCHESTER, Abbotsbury Castle (gr. Mr. H. Kempshall), showed unusually fine flowering spikes of Phormium tenax, Beschorneria yuccoides, and Cordyline australis in a setting of Agaves, Aloes and other succulent plants.

Mr. W. J. GODFREY, Exmouth, Devon, showed Zonal Pelargoniums, Solanum Wendlandi, bunches of Roses and many vases of garden border flowers.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., showed a choice array of hardy flowers. The group was arranged with taste, taller subjects being used as foils to smaller ones. Liliums, Delphiniums, Campanulas, Gladioli, Lupins, hardy Nymphæas, Salvias, Centaureas, &c., formed the principal subjects of the group.

Messrs. WARE also showed miscellaneous hardy flowers in season—Pæonies, Carnations, Delphiniums, Gaillardias, &c.

Messrs. JOHN PEED & SON, West Norwood, London, S.E., showed boxes and pans of Alpine and rock garden plants. The same firm also displayed a group of tuberous-rooting Begonias and excellent strains of Streptocarpus and Gloxinia.

Messrs. GEO. BUNYARD & Co., Maidstone, Kent, showed a large array of hardy border flowers. The large flowering Coreopsis lanceolata major was shown well; we also noticed a nice vase of Centaurea macrocephala. The double White Campanula Morbennii, Delphiniums in variety, Liliums, Irises, Œnotheras, and many other subjects contributed to a pleasing display.

Mr. J. BRADSHAW, Southgate (gr. Mr. Whitelegg), contributed a group of cut hardy flowers—Campanulas, Delphiniums, Lilies, Heucheras, and other things being shown in large numbers.

Messrs. HEATH & SON, Cheltenham, showed a mixed collection of garden flowers, including many Roses, Carnations, Sweet Peas, hardy border flowers, &c. The Roses were an especial feature of the group, many old favourites being presented in excellent condition.

Messrs. R. H. BATH & Co., The Floral Farms, Wisbech, displayed a similar group to the last-named exhibitor. They had Roses, Sweet Peas, and border flowers, the whole being backed by a row of showy spikes of Delphiniums. The new double blue Lobelia Kathleen Mallard found a place in this exhibit.

Messrs. WM. BULL & SONS, King's Road, Chelsea, showed vases of Gladioli, plants of the ornamental-leaved Hydrangea mivahs, and specimens of a new blue Lobelia—Bull's Compact Double.

Mr. R. C. NORCUTT, The Nursery, Woodbridge, displayed hardy garden flowers in great variety.

Mr. H. C. PULHAM, Elsenham, Essex, showed a temporised rock-garden furnished with appropriate plants. Campanula pumila and C. p. alba were splendidly shown.

The Misses HOPKINS, Mere, Knutsford, staged bunches of garden flowers and rock-garden plants.

The GUILDFORD HARDY PLANT NURSERY Co., Guildford, Surrey, showed border flowers in great variety. Lilium Brownii was represented by several good plants in pots. A large selection of Œnotheras was shown; spikes of Delphiniums were also prominent.

Messrs. WM. ARTINDALE & SON, Nether Green, Sheffield, showed hardy flowers, among which was a large number of Delphiniums and several shades of Iceland Poppies, one of orange colour being very pleasing.

Messrs. G. & A. CLARK, LTD., Dover, showed hardy plants in great variety, including Water Lilies, Japanese Irises, Eremuri, Dictamnus, Scabiosa Caucasica, Potentillas, and many other showy subjects. The same firm also staged a large assortment of Sweet Peas.

Hardy flowers in variety came from Messrs. PAUL & SON, Old Nurseries, Cheshunt. We noticed a fine batch of the old Siberian Larkspur Delphinium grandiflorum plenum—very rich in colour and most effective. Heucheras, Eryngiums, Campanulas, Alstrœmerias, and many examples of cut shrubs.

FERNS.

Displays of these plants were confined to two exhibitors, but each was worthy of the highest commendation.

Mr. H. B. MAY, Upper Edmonton, put up a large group, comprised entirely of choice sorts, all of which were beautifully grown. In Adiantums, A. macrophyllum bipinnatum, A. macrophyllum striatum, A. tetraphyllum acuminatum, and A. curvatum were specially good, while the beautiful A. lunulatum was never seen in better form. A. caudatum—another pretty species with drooping fronds—was equally good. The Aspleniums included cicutarium, the best forms of the bulbiferum type, and other choice sorts. Davallias were represented by all the choicest sorts. D. solida superba, which recently gained a First Class Certificate, was beautifully shown. Numerous varieties of D. fijiensis were specially good. D. braziliensis, a new introduction, is a beautiful species. D. Veitchii, D. retusa, and others were good. Nephrolepis were well shown, and included exaltata superba, a crested form which was recently given a First Class Certificate. N. Piersoni elegantissima recently gained a First Class Certificate, and is certainly one of the most beautiful of Ferns. Gymnogrammas included the best of the silver and gold forms in plain and crested varieties. Of Pteris there were P. Summersi, crested forms of P. cretica, P. scaberula, and others.

Messrs. HILL & SON, Lower Edmonton, arranged a beautiful group on the ground, with large specimens at the background and choice sorts in front. Tinted varieties are always a feature with this firm. Didymochlæna truncatula (with bronzy fronds), Davallia polyantha, Doodia aspera, multifida, Adiantum tinctum, A. Veitchii, A. macrophyllum, and A. Hendersoni gave colour to the group. Pteris Childsi, Pteris scaberula, Gleichenias, and Platyceriums were well shown in the best sorts. Davallia Fijiensis robusta, and several other varieties of the same species were good. Nephrolepis Fosteri, N. Piersoni, N. Scottii, and other sorts were well shown. Aspleniums included a beautiful specimen of A. præmorsum, Lygodiums in all the best species, Polypodiums on tree stems, Woodwardia radicans cristata, Aspidium lasercitiifolium, large Dicksonias, Alsophilas, Cibotiums, and other imposing species made up a very fine exhibit.

STOVE PLANTS.

Mr. W. ICETON, Granard Nurseries, Putney Park Lane, S.W., made an exhibit of Palms and other fine foliage plants; Hydrangea paniculata grandiflora, Lilies of the Valley worked up in the shape of columns, &c.

Messrs. J. LAING & SONS, Forest Hill Nurseries, London, S.E., made an exhibit of Caladiums, in which the plants were remarkable for good development of colour rather than large size. A new variety named King Haakon was especially pretty; the leaves are of rosy flesh and green shades.

Messrs. W. BULL & SONS, King's Road, Chelsea, exhibited a group of fine foliage plants, in the centre being a magnificent specimen of Dracæna Victoria. Tree Ferns, Nepenthes, Codiæums, Bougainvillea "Maud Chettleburgh" were all pretty and attractive.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, had a corner exhibit in the large Orchid tent. It was composed of well-grown Abocasias, Codiæums, Cordylines, Palms, and other decorative foliage plants.

Mr. H. B. MAY, Upper Edmonton, displayed a beautiful batch of Ixoras. The varieties included I. macrothyrsa, with large trusses of bloom, I. Dixiana, one of the best kinds, with deep orange-coloured flowers, I. Williamsi, I. aurantiaca, I. Fraseri, I. amabilis, and others. Ixoras are now used by florists, and are found very serviceable. Mr. MAY has grown quite a large number for the market this season, and they have sold readily. Codiæums were also well shown, and a large collection of Zonal Pelargoniums (cut bloom), which included the most useful semi-double varieties grown for market purposes, also the best of the new Cactus-flowered varieties.

Messrs. JNO. PEED & SONS, Roupell Park Nurseries, West Norwood, showed a group of plants of Souvenir de la Malmaison Carnations, with a few Tree varieties in addition. From the same firm was exhibited an imposing group of Caladiums, most of them large specimen plants of brilliant colours.

MISCELLANEOUS PLANTS.

A group of Lisianthus eythropensis was shown by Miss ALICE DE ROTHSCHILD, Eythrop, Aylesbury (gr. Mr. E. Gibbs). The open salver-shaped blossoms are coloured violet, with dark base and gold anthers—an exceptionally fine flower.

Messrs. W. CUTBUSH & SONS, Highgate Nurseries, Middlesex, furnished one of the corners of the largest tent with "Malmaison" and Tree Carnations, hybrid Verbenas, Lantanas, Roses (Lady Gay, Mrs. F. W. Flight, and other varieties), Ferns, Palms, &c. Messrs. CUTBUSH'S style of arrangement of such groups at the Temple and other shows is well known, and the exhibit under notice was as effective as the best of them. Adjoining this group was an exhibit of rockery and water plants. Enclosed by the rockery was a small pool of water containing Nymphæas, &c.

Pæonies and tufted and fancy Pansies made a fine show as exhibited by Messrs. DOBBIE & Co., Rothesay, the last-named flowers being in superb form and in great variety. The same firm also contributed fancy and regal Pelargoniums and Sweet Peas.

Mr. G. F. WATERS, Deanland Road, Balcombe, Sussex, showed tree, border, and Souvenir de la Malmaison Carnations in popular varieties.

Mr. A. F. DUITON, Iver, Bucks, showed vases of American or winter-flowering Carnations in the newest and choicest varieties.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, staged miscellaneous greenhouse flowering plants. They had a very fine display of the showy Solanum Wendlandi in small pots, Ericas in variety, Verbenas, Roses, Carnations, and pans of coloured Nymphæas.

Messrs. H. CANNELL & SONS, Swanley, displayed handsome Cannas, some of the spikes being not more than 6 inches high. Victory (scarlet and gold), Hesperides (pale orange), Niagara (crimson, with a golden edge), and Franz von Vecsey (cherry-cerise—quite a new shade in Cannas) are among the more distinct and novel. The same firm displayed a collection of Sweet Peas, the individual flowers as well as the trusses calling for admiration in such superb condition were they. Jeannie Gordon (cream and pink), King Edward VII., Emily Eckford (fine blue), Evelyn Byatt (a rich flame colour), and others formed an exceptionally fine lot.

Messrs. JOHN LAING & SONS, Forest Hill, showed Streptocarpi.

Messrs. J. CHEAL & SONS, Crawley, showed their new rose-coloured Lupine.

Messrs. PHILIP LADDS, Swanley, Kent, staged a white and yellow variety of market Chrysanthemum.

Mr. R. RASMUSSEN, Eastville Nurseries, Waltham Cross, exhibited a batch of bedding Petunias in small pots.

Messrs. JARMAN & Co., Chard, showed their new varieties of Sweet Sultans, vases of a yellow-coloured Carnation, and boxes of Roses, in which was seen a huge specimen of the variety Mildred Grant.

Mr. VINCENT SLADE, Taunton, Somerset, showed bunches of Zonal Pelargoniums.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, exhibited border and "Malmaison" Carnations. The Nizam (a new tancy), Helen Countess of Radnor (dark clove colour), Viscountess Ebrington, new (buff yellow—a unique colour), Miss Willmott (of most perfect form), and Duchess of Wellington (heliotrope) are all good kinds.

Mr. T. A. HUMMERSTON, Epping, showed a new double pink Zonal Pelargonium named Pride of Essex.

Fuchsias and Zonal Pelargoniums were exhibited by Lady PHILLIMORE, Campden Hill, W. (gr. Mr. Becket).

AWARDS.

Begonia Miss May Sutton.—A very large flower with extra wide, shell-like petals opening somewhat loosely, of very pale pink colour with deeper rose at the margins. (Award of Merit.)

B. Purity.—This is a pure white variety of perfectly circular form, moderate size, and every petal crimped or crenated several times. It is the best flower we have seen of this type, and is very full in the centre. Both the varieties above were shown by Messrs. BLACKMORE and LANGDON. (Award of Merit.) See fig. 18.

Chrysanthemum maximum Mrs. Charles Lowthian Bell.—This is an extra fine variety of the type, the flowers being of unusual size. Shown by Mr. CHARLES DOWSON. (Award of Merit.)

Davallia elegans variety Mayi.—A variety with broad pinnules, and one having a fine effect. Shown by Mr. H. B. MAY. (Award of Merit.)

Lisianthus × eythropensis.—A group representing flowers of this reputed hybrid was shown by Miss ALICE ROTHSCHILD, Eythrop, Aylesbury (gr. Mr. Gibbs). The flowers of this greenhouse perennial plant are of deep purple colour, and very similar to those of the species L. Russellianus figured in these pages on September 1, 1888, p. 240. (Award of Merit.)

Pelargonium Hector Piacomelli.—This Ivy-leaved variety with semi-double, blush-mauve coloured flowers with red markings was shown by Messrs. R. & G. CUTHBERT. (Award of Merit.)

Nymphæa James Brydon, a rich crimson variety shown by Mr. AMOS PERRY. (Award of Merit.)

Richardia Mrs. Roosevelt.—This variety has moderately large sulphur-coloured spathes and maculated foliage. In appearance it would seem to be between R. hastata and R. Elliottiana. Shown by Mr. AMOS PERRY. (Award of Merit.)

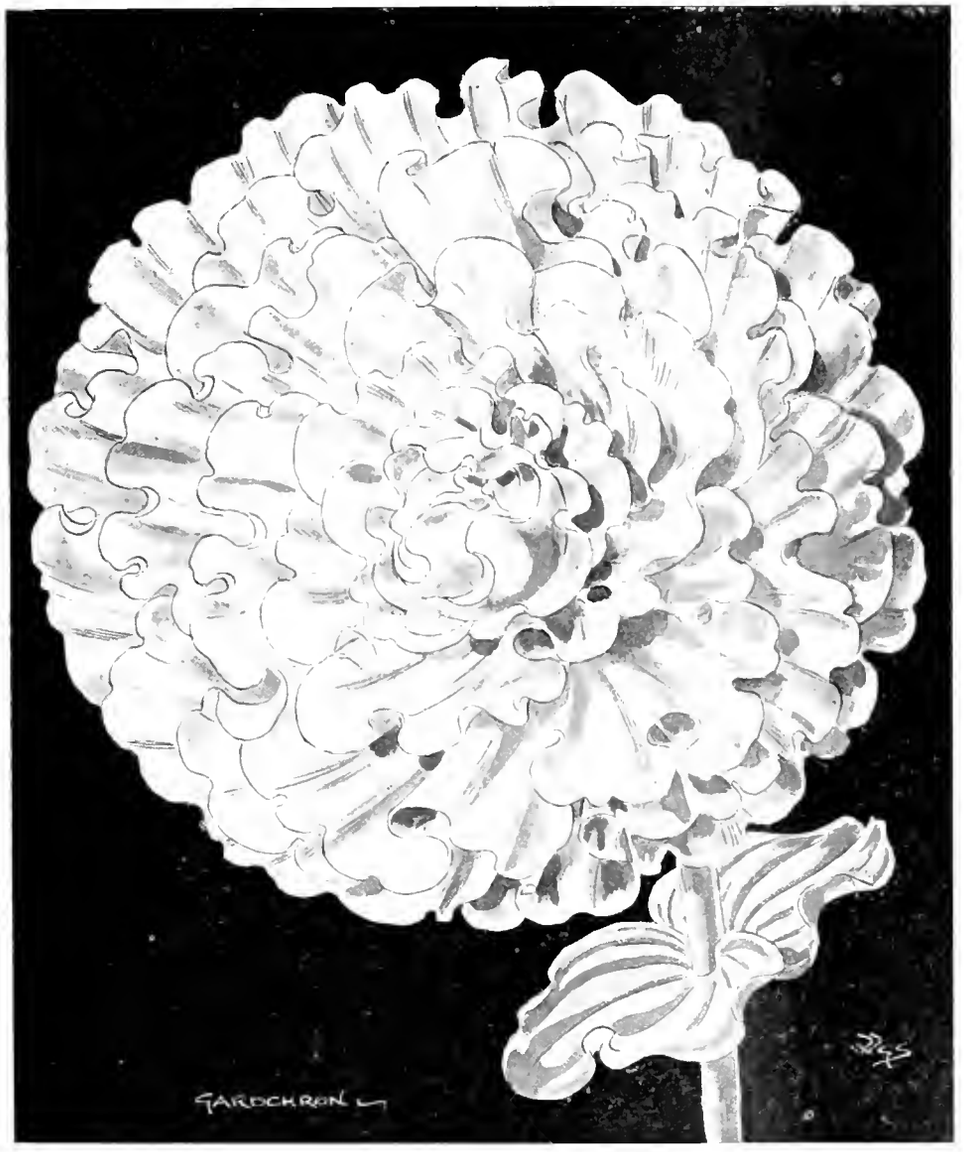


FIG. 18.—BEGONIA PURITY: FLOWER WHITE. OBTAINED AN AWARD OF MERIT AT THE HOLLAND HOUSE SHOW.

Osmunda Mayi.—This is a variety of O. palustris, with somewhat congested pinnules, having linear markings of creamy-white. Shown by Mr. H. B. MAY. (First-Class Certificate.)

Rose Queen of Spain.—A large H.T. variety, obtained as a seedling from Antoine Rivoire. The petals are of flesh colour, becoming paler and developing a little creamy shade as they become older. The blooms possess a large number of petals, and are thus in the florists' language "very full." Shown by Messrs. S. BIDE & SONS, Farnham, who had numerous specimens. A photograph of some of the flowers exhibited is reproduced at fig. 17. (Award of Merit.)

Rose Mrs. Jardine.—A H.T. variety having large shell-like petals of deep rose colour. Shown by Messrs. ALEX. DICKSON & SONS. (Award of Merit.)

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair, and Messrs. Jas. O'Brien (Hon. Sec.), F. Sander, W. Thompson, H. J. Chapman, H. A. Tracy, W. Boxall, De B. Crawshay, W. A. Bilney, H. Little, J. W. Potter, W. H. Young, W. H. White, T. W. Bond, A. A. McBean, W. Bolton, F. J. Thorne, W. Cobb, F. M. Ogilvie, Arthur Dye and H. T. Pitt.

In the main tent one side of the central staging was occupied entirely by Orchids, the first group, which commenced in front of the staging and extended a considerable distance, being staged by Messrs. F. SANDER & SONS, St. Albans. The back of the group was of graceful Palms, among which were arranged many finely-flowered specimens of Dendrobium Dalhousieanum, in the centre being an example of the feather-fronded Polypodium Knightii, over which trailed spikes of the large yellow Oncidium macranthum hastiferum. Arching forward were long sprays of Oncidium phymatochilum, Brassia verrucosa, and other species with slender sprays, and giving colour in the middle area were batches of the Sanderian strain of Lælio-Cattleya Martinetii, the variety Flambeau being of an intense reddish rose tint with purple lip, the same rich reddish hue suffusing several of the same section; a selection of Vanda Sanderiana with seven spikes of very fine flowers, and selections of Cattleya Mossiæ, including C. M. Glory, Fairy Queen, formosissima, Fascinator and Wageneri chrysoglossa, a fine white form with orange-coloured base to the lip. Odontoglossum amabile Royal Sovereign is like a large spotted O. crispum, with the large and long labellum indicating O. Harryanum in the purple marking at the base. The sepals and broader fringed petals were white with clusters of rose-purple flowers in the middle; Miltonia vexillaria, Hardy's variety of the M. v. rubellum section, with crimson mask at the base of the lip. Several specimens of the pure white Lælia majalis alba, a good specimen of a pale yellow variety of Masdevallia Harryana; several Lacæna bicolor, Sanders' variety, of Acineta-like growth, with long pendent racemes of cream-white flowers with purple labellums; several hybrid Odontoglossums; a very fine specimen of Epidendrum Medusæ, with many of its singular flowers. The plant has been in cultivation since 1882. Stanhopea Devoniana, and two other Stanhopeas, and Lælio-Cattleya Canhamiana Monarch, a very handsome and distinct variety, were also noticed. A conspicuous plant was a tall specimen of Vanda cærulea of Messrs. SANDER'S recent importation, which seems far superior to any previously imported. The inflorescence bore fine round flowers of large size and of white ground colour, the venation being followed by broad bands of a light violet hue.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr., Mr. W. P. Bound), furnished the next large group, which was excellently staged and embraced many exceptionally good Orchids. Prominent were the orange and scarlet colour of the clumps of Epidendrum Boundii; the trailing spikes of the large yellow Oncidium macrantham, of which there were about 140 feet of inflorescence; the showy flowers of Cattleya Warscewiczii, one specimen of which bore five grand flowers on a spike, and another, the variety Queen Alexandra, had the labellum almost entirely of a rich claret-crimson colour. Spathoglottis Colmani var. fulvissima, was the most beautiful of the Gatton Park hybrids of this Spathoglottis, and in which the large yellow flowers were spotted and tinged with reddish-rose over the whole surface except the tips of the sepals, which were of canary-yellow. Interesting plants in Mr. COLMAN'S group were several Dendrobiums MacCarthiæ with large rose and white flowers, that beautiful Ceylon species which puzzles most growers, but which Mr. BOUND succeeds with admirably; a nice selection of Odontoglossums, including the spotted O. crispum Boweyanum, &c., was also shown.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a group, which, in accordance with their usual custom, contained a selection of known good things and a few sterling novelties raised at their establishment. On the present occasion the best of the novelties was the new and pretty Odontoglossum × Eurydice (see Awards); others were a fine series of O. Rolfeæ, raised at Heaton, and which in beauty seem to eclipse the Continental form. The group contained a very interesting set of hybrids and fine varieties of species, those noted as of special worth being Sophro-Lælia læta Charlesworthii, a lovely dwarf

hybrid, with large reddish rose-coloured flowers; several plants of Lælio-Cattleya × Fire King, the noble reddish crimson variety, first shown by the late Mrs. R. Briggs-Bury; Miltonia vexillaria (Edippe and M. v. augusta, both very handsome; Brasso-Cattleya Digbyano-Mossiæ and several other hybrids of Brassavola Digbyana; a very fine form of Cattleya Lord Rothschild, of an intense rosy-crimson colour, and with greenish-gold veining on the lip, a form of Schomburgkia Thomsoniana, with good cream-white flowers with purple lips; Cymbidium Huttoni, the now rarer Miltonia Endresii, with many pretty white flowers marked with rose, a very fine batch of the large white Phalænopsis amabilis Rimestadtiana, which formed the centre of the group, and which is one of the finest of white flowers for cutting; Cypripedium "Daisy Barclay," the beautiful hybrid for which J. Gurney Fowler, Esq., formerly obtained a First Class Certificate; Cymbidium Huttoni and a large number of other rare Orchids.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, Richmond (gr. Mr. W. H. Young), staged a small but very select group, including the handsome Cattleya Whitei, Wigan's variety, the unique Zygopetalum Roeblingianum, two good specimens of Platyclinis filiformis with many racemes of yellow flowers, Odontoglossum ardentissimum Joyce, a pretty variety with large white flowers formed much like those of O. Pescatorei, and with light violet blotches on the sepals and petals. Also in the group were two good forms of Dendrobium Phalænopsis, Miltonia vexillaria superba, Lælio-Cattleya eximia, some good Sobralias, Bulbophyllum Dearei and other rare species, for some of which see Awards.

Messrs. Hugh Low & Co., Enfield, staged an effective group in which were a very interesting series of Cattleya Gaskelliana, ranging from the pure white C. G. alba to the charming C. G. Mrs. Somerset Webb, a fine white flower tinged with lilac, and the handsome C. G. superba, as richly coloured as the general run of C. labiata. C. Warscewiczii, Low's variety, had finely coloured flowers, the usual yellow blotches on the lips being reduced to mere specks. The pretty Epidendrum prismatocarpum bore 21 fine spikes, and Lælio-Cattleya Canhamiana alba and other hybrids. Cypripedium niveum, Anguloa Clowesii, A. Ruckeri, Cattleya bicolor Grossii, Sobralia Wilsoni, C. Mossiæ Arnoldiana, Smee's variety, and other rare varieties were included in the group, which also contained some distinct forms of Odontoglossum Pescatorei, and Cattleya Mossiæ Edward Tack, a very finely formed flower of typical colour.

Major G. L. Holford, Westonbirt, Tetbury (gr. Mr. H. G. Alexander), showed a basket of six plants of Miltonia vexillaria, Hardy's variety, a form of M. v. superba of the M. v. rubella section, and with rose-pink flowers having a mask of crimson lines at the base of the lip, and a flower of Sobralia Sanderiana, a large form with white sepals and petals tinged with rose. The lip is of large size, and claret-coloured in front, yellow in the centre.

Monsieur A. A. Peeters, St. Gilles, Brussels, showed a fine specimen of the large pure white Cattleya Mrs. Myra Peeters (Gaskelliana alba × Warneri alba), one of the finest of white Cattleyas, and for which the Orchid Committee voted an Award of Merit, which the exhibitor refused to accept. Viewed by comparison with other awards given to white Cattleyas, the plant seemed to have been worthy of a First Class Certificate.

Francis Wellesley, Esq., Westfield (gr. Mr. Hopkins), sent Cattleya Gaskelliana Mrs. De B. Crawshay, a very pretty form of a uniform light rosy-lilac colour.

W. Thompson, Esq., Walton Grange (gr. Mr. Stevens), sent a fine plant of Odontoglossum Crawshayanum, Walton Grange variety, with a fine inflorescence of very large flowers.

AWARDS.

First Class Certificate.

Cypripedium callo-Rothschildianum, from J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). The splendidly grown plant as exhibited, with two strong spikes, each of three large and handsome flowers, represented the finest hybrid of C. Rothschildianum yet seen. The large dorsal sepal was greenish-white, closely lined with chocolate purple, the broad petal cream-white, with closely arranged blotched lines of claret-purple, and the large labellum reddish-brown.

Cypripedium Godefroyæ leucochilum Hodgkinsoni, from Messrs. Sander & Son, St. Albans. A remarkable variation, equal in size and in the thick substance of the flower to C. bellatulum. The broad sepals and petals were sulphur-yellow, the veining being claret-purple; the large labellum cream-white, unspotted except on the inside (fig. 16, p. 32).

Cattleya Warscewiczii "*White Queen*," from W. P. Burkinshaw, Esq., Hessle, Hull. The "white gigas" for which Mr. Burkinshaw received an Award of Merit August 4, 1903. Flowers pure white, with the rose lip of typical C. Warscewiczii.

Bulbophyllum crassens, from Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young). A noble Malayan species allied to B. Pahudi and B. Ericssoni. The plant bore monophyllous oblong pseudo-bulbs and an erect umbel of eight flowers, each extending over 6 inches across the sepals, which, with the narrow petals, were whitish veined with pale-green, the face of the column and the hinged labellum being tinged with rose-colour.

Award of Merit.

Brasso-Cattleya Madame Hye (C. Harrisoniana × B. Digbyana), from Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A pretty novelty and the first cross effected between B. Digbyana and the slender-bulbed Cattleyas, flowers in shape indicating C. Harrisoniana, blush-rose, with distinctly three-lobed labellum, which is fringed, pale-rose in front, disc light-yellow.

Aerides virens Sanderæ, from Messrs. Sander & Sons, St. Albans. The first albino of this pretty and floriferous species. Flowers in racemes, pure white.

Brasso-Cattleya striata splendidissima (B. fragrans × C. Mossiæ), from Messrs. Sander & Sons. A pretty and fragrant white flower, in which the large labellum is the prominent feature, and which has an orange disc and pale rose apex.

Odontoglossum Eurydice (hastilabium × cirrosum), from Messrs. Charlesworth & Co., Heaton, Bradford. A remarkable cross, with excellent results, the best characters of the species being brought out in a short inflorescence. Sepals and petals lanceolate, whitish, with numerous red-brown bars on the inner two-thirds. Lip constricted in the middle, the base yellowish, tinged with brown, the front lobe blush white.

Cattleya F. W. Wigan, Goodson's variety (Schilleriana × Dowiana aurea), from H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day). A very handsome hybrid of the form of C. Schilleriana, sepals and petals whitish, tinged with purple, lip veined with rose-crimson.

Odontoglossum grande, Zandaghe variety, from Gustave H. Muller, Esq., Rotterdam. A singular and showy variety, with the lip of typical O. grande, but with a suspicion of O. Schleiperianum in the general aspect of the flower, which approaches O. Wilhamsianum, which might be a hybrid of the other two species named. Sepals yellow, barred with brown; petals broad yellow, barred with brown on the inner halves; lip whitish with brown bars at the base.

Botanical Certificate.

Hemipilia amethystina, from Sir Frederick Wigan, Bart. (gr. Mr. W. H. Young). A singular terrestrial Orchid, with a single roundish variegated leaf, and an erect inflorescence of rose flowers with amethyst purple lip.

Fruit and Vegetables.

A superb collection of fruit trees in pots, numbering some 40, and making a singularly attractive group, was staged at one end of a tent by Messrs. Thos. Rivers & Sons, Sawbridgeworth. The collection included Peaches, Nectarines, and Cherries. Some of these latter, 12 years old, stood 10 feet in height, and some Peaches 8 feet in height. All the trees were finely fruited, the Peaches especially being large and well coloured. The whole represented a triumph in pot-tree culture. The Peaches included Sea Eagle, Duke of York, Princess of Wales, Peregrine, and Thos. Rivers. The Nectarines were Early Rivers and Victoria. The Cherries comprised Empress Eugenie, May Duke, Early Rivers, Black Bigarreau, Frogmore Bigarreau, and Emperor Francis.

A smaller, but excellent, lot of trees, 18 in number, were staged by S. Heilbut, Esq., Maidenhead (gr. Mr. G. Camp). Of Nectarines, six fine trees being present, Early Rivers was the chief, the fruits large and well coloured. Peaches included Peregrine, Duchess of Cornwall, Hale's Early, Early Rivers, Elton, Black Bigarreau, Emperor Francis, Bigarreau Napoleon, and B. Noir de Guben. Messrs. G. Bunyard & Sons, Maidstone, had a large collection of pot trees of lesser size and more varied. In this group were Cherries, Apples, Peaches, Plums, and other fruits. The trees were well fruited, and served to show what a remarkable variety could thus be obtained in a comparatively limited space. Most of the trees were quite young.

Collections of Fruit.

Of very high merit, showing first-class culture, was the collection of Pineapples and Strawberries shown by the Right Hon. Lord Llangattock, The Hendre, Monmouth (gr. Mr. T. Coomber). There were 17 handsome Queen Pines, all of perfect form, dishes of Raymaker and Barrington Peaches, a seedling Melon, and the finest samples in the show of Strawberries—Gunton Park, Trafalgar, The Laxton, Bedfordshire Champion, Leader, The Bedford, Sir Charles Napier, and Fillbasket. These were displayed in shallow boxes in a most attractive way. Messrs. W. May & Co., Teynham, Kent, set up a most interesting collection of 36 dishes of Cherries, the fruits very fine samples. The finest whites were Bigarreau Napoleon, Alton Heart, Florence Heart, and Amber Heart. The best blacks were Black Eagle, Waterloo, Webb's Improved Black, Turkey Heart, and Bedfordshire Black Heart.

C. C. Paine, Esq., Haverstock Hill (gr. H. Whiting), sent nine bunches, berries large and finely finished, of Black Hamburgh grapes, and some Melons.

From the Horticultural College, Swanley, Kent, came numerous very fine Melons, richly coloured and handsomely netted, named College seedling; also three baskets of Dymond Peaches.

Lord Hillingdon, Uxbridge (gr. Mr. A. R. Allan), sent fine Strawberries in variety, Gunton Park, Lady Suffield, Lord Suffield, Trafalgar, Waterloo, Dr. Hogg, President, Sir J. Paxton, and others, several varieties showing singularly deep colour.

Messrs. George Bunyard & Co. had a most interesting collection in dishes and boxes of Peaches, Waterloo and Alexander, Cherries, Kentish Black, Ludwig Bigarreau, Elton Heart, Bigarreau Napoleon, Emperor Francis, Florence, St. Margarets, Windsor, Noir de Guben, Waterloo, and Noble. Also yellow and red Raspberries, various well-preserved Apples, and a large variety of Strawberries, including Louis Gauthier, Givon's Late Prolific, Latest of All, British Queen, The Bedford, Dr. Hogg, and Royal Sovereign.

Vegetables.

Of these products, Peas were the dominant feature, Messrs. Jas. Carter & Co., High Holborn, having staged probably the largest collection seen at any similar exhibition. There were not fewer than 250 dishes, and all diversely named. The collection included the very finest and newest variety in "Quite Content," with pods 6 to 7 inches long; and samples of those now regarded as quite old. Also there were first earlies, the pods quite ripe, and such late ones as Carter's Michaelmas and Sutton's Late Queen were stats; yet all raised from one sowing. Of the finest pods, besides Quite Content, were Duke of Albany, Alderman, Gladstone, Duchess, Rent-Payer, Standard, Captain Cuttle, Stratagem, and others. The firm also exhibited a large collection of Cos and Cabbage Lettuces.

Miss M. A. Lodge, Loosley Park, Guildford (gr. Mr. R. Stannard), sent 12 varieties of seedling Peas, many evidently very fine and meriting attention, being specially great croppers.

Exhibits in the Open.

Mr. D. Russell, of the Essex Nurseries, Brentwood, showed extensively variegated and other pictorial shrubs and trees, and a welcome bit of bright colour was imparted to the group by a score of Canna in flower. Of novelties we may mention Ulmus minor foliis variegatis, Aralia pentaphylla, and the yellow-foliaged variety of Cupressus macrocarpa, and a plant 3 feet high of Veronica Traversi conspicuous for its extreme floriferousness.

Mr. L. R. Russell, of the Richmond Nurseries, Richmond, Surrey, showed a group of

similar plants, but placed widely apart, so as to show them to better advantage. These consisted largely of forms of Hedera, both variegated and green-leaved, Dimorphanthus, Eleagnus macrophylla, Cistus ladaniferus, and Ceanothus Gloire de Versailles. The group was backed with purple Beech and Prunus Pissardi.

Messrs. W. FROMOW & SONS, Sutton Court Nurseries, Chiswick, arranged a large group of pictorial trees and shrubs consisting of Japanese Acers in great variety, the entire group being bordered with a line of Arundinaria Fortunei variegata and Eurya latifolia variegata.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, showed numerous specimens of Veronica Autumn Glory, and V. Blue Gem, the former with deep blue, and the latter with light blue flowers. There were also examples of Catalpa syringæfolia, aurea, Abies pungens glauca, Clematis erecta alba, and several other varieties.

Messrs. W. CUTBUSH & SON, Highgate and Barnet, showed, as usual, a large assortment of Topiary objects, which must have cost infinite trouble to form and keep in shape.

Pigmy trees were shown by Messrs. CARTER, of High Holborn, and by Messrs. BARR & SONS, King Street, Covent Garden, London.

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, had a showy group of hardy herbaceous cut blooms of choice species and varieties, including Heuchera sanguinea, H. s. Walker's variety, Perry's variety of Phlox Laphami (a distinct, blue-flowered variety), a number of showy Turk's Lilies, such as L. pardalinum, L. pardalinum, Red Giant, the scarlet L. dalmaticum, and others. A number of big bunches of Delphiniums in variety were shown.

An extensive exhibit of Cabbage and Cos varieties of Lettuces was contributed by Messrs. CARTERS, High Holborn, London, of which, although most of them were in the best state for consumption, nothing in the way of novelties was observed, with the exception of Holzschuhe's Success, a brown-leaved Cabbage variety, New York Peerless, with red spotted leaves, and Jumbo Giant White Cos. The same firm showed a number of well-flowered plants of their new double-flowered blue Lobelia, excellent as a basket plant, as which it was shown.

HORTICULTURAL SUNDRIES, IMPLEMENTS, &C.

The POTTERS' ART GUILD (Mrs. F. G. Watts' Village Industry), Compton, Guildford, exhibited vases, ornamental pots of quite new forms in modern pottery, and square and circular receptacles for plants, a wellhead, &c., all but the last being manufactured from a fine kind of red clay. Garden seats were displayed by Mr. CASTLE, Baltic Wharf, Millbank, London, made of unpainted Oak, ship timber, massive and endurable; vases, plant tubs and sundials from Messrs. PULHAM & SON, 71, Newman Street, London, W.; motor and hand mowing machines by Messrs. GREEN & SONS—a very old-established firm of makers. Messrs. RANSOME & SIMS were likewise exhibitors of motor mowers.

Messrs. CHAMPION & CO., Old Street, City Road, showed handsome plant tubs of polished Oak. Messrs. LIBERTY & CO., Regent Street, W., showed vases, pedestal, window-boxes, bordering for flower beds, sun-dials, and basin and fountain in terra cotta: Messrs. D. ROBERTS & SON, Tottenham, London, N., had plant tubs for indoor and outdoor uses. Models of glass-houses, &c., were shown by Messrs. DUNCAN TUCKER & SONS, of Tottenham, showing light, yet strong, construction and ample means of ventilation: Messrs. SKINNER, BOARD, & CO., Rupert Street, Bristol, showed an amateur's glass-house, furnished with plant benches of corrugated iron sheeting.

Garden seats, summer-houses of canvas, and garden hose on reels were shown by Messrs. HEADLEY & EDWARDS, LTD., Cambridge, who also had specimens of plant-vases constructed with light iron ribs; the interiors to be lined with fine turf, which keeps alive and is kept cut close with the shears.

Messrs. W. POORE & CO., 52, Queen Victoria Street, showed American stoves and the Challenge hot-water apparatus for heating glass-houses and other structures. Messrs. TABOR & CO., Dunedin House, Basinghall Avenue, E.C., showed samples of their Fertiliser. The Italian firm, "MANUFACTURA DE SIGNA," of Florence—London address, 17, Mount Street, W.—exhibited garden seats, vases, plant tubs of antique design in a sort of light-coloured terracotta. Mr. D. G. CORNWALL, Warwick Gardens, Worthing, showed his very convenient form of fruit-packing baskets for transit by rail or post. A combined tray and table, with folding-up legs, came from Messrs. ABBOTT BROS., and fine soft spongy peat for Orchids and stove plants, and painted and polished Oaken tubs were shown by Mr. J. DOX, of Park Row, Nottingham.

Messrs. W. WOOD & SON, of Wood Green, London, showed manures, sprayers, weed killers, garden tools, and appliances, insecticides, soil in variety, fruit-packing boxes—a very large exhibit.

Gishurst compound and preparations for the destruction of insects came from PRICE PATENT CANDLE CO., Battersea; and Mr. J. GEORGE, 14, Redgrave Road, Putney, had a small exhibit of manures, soils, insecticides, and mushroom spawn. Messrs. MERRYWEATHER & SONS showed a number of their specialities applicable to uses in gardens; and OLLENDORFFS, 15, Leadenhall Street, London, showed manures for special purposes, Peruvian Guano, as did Messrs. W. VOSS & CO., Carlton Works, Glengall Road, Millwall, London, including their "Wonderful," a soluble powder manure of excellent quality, and green sulphur, a French product of extreme fineness that can be used with a small pair of bellows against microscopical moulds and other fungi. Slugene, the best substance for the destruction of slugs, was shown by Messrs. STANLEY & CO., LTD., 69, Fenchurch Street, London. Mr. J. WILLIAMS, 41, Oxford Street, Ealing, showed pretty glass devices as flower-holders for dinner table decorations.

Messrs. CORRY & CO., Shad Thames, London, S.E., exhibited insecticides, plant cleansers, and manures in great variety. Messrs. RANSOME, SIMS, & JEFFERIES, Ipswich, had hand and horse mowing machines.

Knapsack and other sprayers, insecticides, syringes, &c., were shown by DE LUZY FRERES, 99, Lilford Road, Camberwell. Mr. G. W. RILEY, Norwood Road, Herne Hill, S.E., made a very extensive show of summer-houses, one being of circular shape and mounted on a turntable, so as to be capable of being readily turned in any desired direction. In all cases the woodwork was polished and varnished, and the front parts were constructed of barked oak.

AWARDS MADE BY THE COUNCIL.

SHERWOOD CUP:—H. B. May, for pot plants.

GOLD MEDALS:—W. Cutbush & Sons, for a group of plants; Lord Llangattock, for fruits; T. Rivers & Sons, for fruit trees in pots; Sander & Sons, for Orchids; H. B. May, for Ferns, &c.

SILVER CUPS:—G. Bunyard & Co., for fruits and flowers; G. Paul & Son, for Roses and herbaceous plants; J. Carter & Co., for Peas, &c.; J. Peed & Son, for Caladiums, &c.; L. R. Russell, for ornamental trees, &c.; T. S. Ware, Ltd., for Begonias, &c.; J. Jackman & Sons, for Roses, &c.; Wm. Paul & Son, for Roses; W. Wallace & Co., for hardy plants; J. Hill & Son, for Ferns; Frank Cant, for Roses; S. Heilbut, Esq., for fruit trees in pots; Amos Perry, for hardy plants, &c.; Charlesworth & Co., for Orchids; M. Pritchard, for herbaceous plants, &c.; Blackmore & Langdon, for Begonias; Jeremiah Colman, Esq., for Orchids; Gunn & Sons, for Phloxes; Sir F. Wigan, for Orchids; E. R. Cant & Sons, for Roses; J. Bradshaw, Esq., for hardy Peas; R. & G. Cuthbert, for greenhouse plants.

SILVER GILT FLORA MEDALS:—Barr & Sons, for hardy plants; J. Cheal & Son, for trees and shrubs; W. Bull & Son, for stove and other plants; H. Cannell & Sons, for Cannas, &c.; G. Reuthe, for herbaceous plants; C. W. Breadmore, for Sweet Peas, &c.; Dobbie & Co., for Violas, &c.; Hugh Low & Co., for Orchids, &c.; J. Forbes, for Pentstemons, &c.

SILVER GILT BANKSIAN MEDALS:—J. Laing & Sons, for Caladiums, &c.; R. H. Bath & Co., for Roses, Carnations, &c.; A. F. Dutton, for Carnations; W. Fromow & Sons, for Maples, &c.; Hobbies, Ltd., for Roses; G. & A. Clark, Ltd., for herbaceous plants; G. Cooling & Sons, for Roses; A. Dickson, for Roses; W. Iceton, for foliage plants; Kelway & Son, for herbaceous plants; King's Acre Nursery Co., for Roses.

SILVER FLORA MEDALS:—H. Eckford, for Sweet Peas; Ladhams, Ltd., for herbaceous plants; D. Russell, for shrubs; R. C. Notcutt, for hardy plants; A. Ll. Gwillim, for Begonias; C. F. Waters, for Carnations; Jarman & Co., for Sweet Sultans; J. Douglas, for Carnations; E. E. Grimson, Esq., for Roses; Lady Phillimore, for Fuchsias; Mary Countess of Ilchester, for semi-tropical plants; W. J. Godfrey, for Solanum Wendlandi, &c.; J. A. Young, Esq., for Carnations; W. Artingdale & Son, for herbaceous plants; G. Stark & Son, for Sweet Peas.

SILVER KNIGHTIAN MEDALS:—Messrs. Ray, for Cherries.

SILVER BANKSIAN MEDALS:—C. C. Paine, Esq., for Grapes; Swanley College, for Melons; J. King & Son, for Sweet Peas; E. Mocatta, Esq., for Sweet Peas; W. Poupart, for Sweet Peas; H. C. Pulham, for Alpines; Misses Hopkins, for Alpines; Heath & Son, for miscellaneous plants; A. J. Upton, for Alpines; W. & J. Brown, for miscellaneous plants; V. Slade, for Pelargoniums.

HORTICULTURAL SUNDRIES, IMPLEMENTS, &C.

SILVER-GILT BANKSIAN:—Manifattura di Signa, for terra cotta vases.

SILVER KNIGHTIAN:—G. W. Riley, for rustic summer-houses; A. Shanks & Son, for lawn mowers; W. Duncan Tucker, for greenhouses; Merryweather & Sons, spraying apparatus; D. G. Cornwell, fruit-packing boxes.

SILVER BANKSIAN:—Wood & Sons, for horticultural sundries; Pulham & Sons, for rockwork; Ransomes, Sims and Jefferies, for lawn mowers, &c.; Potters' Art Guild, for terra cotta garden furniture; Philip Castle, for garden seats and tables; T. Green & Son, for lawn mowers; Headley & Edwards, for garden furniture.

BRONZE BANKSIAN:—Geo. James, Herbert & Co., and J. Bentley, for horticultural sundries; Champion & Co., for tubs for shrubs; Liberty & Co., for terra cotta vases, &c.; Abbott Bros., for table trays and preserving bottles; Dowell & Son, for Orchid pottery; J. Pinches, for Acme labels.

SWEET PEAS AND VIOLAS AT WISLEY.

ON July 6 a deputation from the Floral Committee, with Mr. W. Marshall, chairman, visited Wisley to inspect the Sweet Peas and Violas then in flower. The trial of Violas is in reality the continuation of a trial which commenced last year, therefore awards had already been made to some of the best varieties. On the occasion under notice three marks were awarded to Viola Maggie Mott, which is certainly a very good flower, and distinct amongst the pale-blue Violas of the type of Kitty Bell and Dorothy. It was agreed that Royal Sovereign was the best yellow variety, and that King Cup and Jennie are identical, but are not so rich in colour as Royal Sovereign. White Empress was the best white variety present, but Marchioness was considered to be synonymous with this. Archie Grant was the best dark-blue flower, but Councillor Watters had a better habit of growth, was more floriferous, its flowers, however, are rather purple than blue.

The trial of Sweet Peas could hardly be considered satisfactory for two reasons: the first is that the seeds, as supplied by the nurserymen and seedsmen, were in many cases very untrue to name, some varieties containing almost as many "rogues" as true flowers. The second reason is that there were not sufficient varieties cultivated to allow of the new ones being judged in comparison with older sorts of the same type, which in all cases of florists' flowers, fruits, and vegetables is very desirable. Three marks were awarded to each of the following varieties, which have already been described in these columns. Countess Spencer (light rose colour), John Ingman (reddish-rose), the Hon. Mrs. Kenyon (sulphur coloured), Mrs. G. Higginson (pale blue or mauve), Dainty (white, very faintly tinted), Jeannie Gordon (pink and white), Helen Pierce (pale blue), Dorothy Eckford (white), and Helen Lewis (rose coloured). One of the most distinct varieties is Helen Pierce, the pale blue standard being marked with deeper coloured wave-like veining. Scarlet Gem was one of the least true varieties, and many of the seeds of Mrs. Chas. Foster failed to grow.

NATIONAL SWEET PEA.

JULY 5.—We were enabled to publish a report of the principal classes of this show, which was in progress as we wrote, in our last issue, and we now print further details.

Eighteen bunches, distinct.—Among three good exhibits, that staged by Mr. T. VICKERS, Well Vale, was awarded the first prize.

Twelve varieties, distinct.—Mr. CHAS. BREADMORE was followed in this class by Messrs. SALTMARSH, The Nurseries, Chelmsford.

Nine bunches of Sweet Peas, distinct.—Thirty-seven displays were seen in this class. The premier collection came from Mr. H. W. LEES, Warblington Cottage, Havant.

Six bunches in distinct varieties.—The best display among twenty-four was that shown by Dr. LAMPLOUGH, Kirstall, Alverston.

SPECIAL COLOUR CLASSES.

The following is a list of the varieties and prize winners in the classes for bunches of Sweet Peas of scheduled colours:—White: Dorothy Eckford, shown by Dr. LAMPLOUGH. Blush: Duchess of Sutherland, shown by Messrs. PROCTER, Carnforth. Crimson: King Edward VII., shown by Mr. T. HITCHIN, Trevarrick, Cornwall. Cerise: Coccinea, shown by the last-named exhibitor. Rose and carmine: Lord Rosebery, shown by Mr. M. Y. GREEN, Eynsford. Pink: Gladys Unwin. Orange: Miss Willmott, shown by Mr. C. BREADMORE. Yellow and buff: Hon. Mrs. Kenyon, shown by Mrs. F. BREWER, Richmond, Surrey. Lavender: Lady Grisel Hamilton, shown by Messrs. G. & A. CLARK, LTD., Dover. Blue: Romolo Piazzani, shown by Mr. C. W. BREADMORE. Mauve: Mrs. W. Wright, shown by Dr. LAMPLOUGH. Violet and purple: Duke of Westminster, shown by Mr. C. W. BREADMORE. Maroon and bronze: Black Knight, shown by Mr. G. CRABBE, Addlestone, Surrey. Magenta: George Gordon, shown by Messrs. G. & A. CLARK, LTD. Picotee edged: Lottie Eckford, shown by Mr. F. ACKLAND, Frome. Striped and flaked red and rose: America, shown by Mr. E. F. USHER (gr. to C. K. Wild, Esq.), New Eltham. Striped and flaked purple and blue: Princess of Wales, shown by Mr. F. ACKLAND. Bicolour: Triumph, shown by Messrs. CLARK. Fancy: Agnes Johnstone, shown by Mr. BREADMORE.

NEW VARIETIES.

With a view to encourage the exhibition of newer varieties of Sweet Peas, the colour classes were duplicated for varieties introduced in or since 1901, and which were not in the society's classification table. No award was given unless the variety showed distinctness from or superiority to those already in cultivation. In many of the classes no awards were given, but they were in those following:—Blush: Bobby K., shown by Mr. CHANDLER, Haslemere. Crimson: Queen Alexandra, shown by Messrs. J. HOUSE & SON, Westbury-on-Trym. Lavender: Lord Nelson, also shown by Messrs. HOUSE. Blue: Bolton's Blue, shown by Mr. H. ALDERSEY, Chester. Violet and purple: Mrs. M. Gerhold, shown by Mr. H. A. GERHOLD, Penarth. Striped and flaked purple and blue: Helen Pierce, shown by Mr. F. R. CASILE, Brunscombe, Oxford.

AWARDS TO NOVELTIES.

Sweet Pea Audrey Crier.—The society offered a silver medal for the finest novelty shown. This was secured by Mr. C. W. BREADMORE for his variety Audrey Crier; in addition a first class certificate was awarded to it. The flower greatly resembles Gladys Unwin, but the colour is much brighter, due to the deeper suffusion of rose. The standard is very large and somewhat reflexed, forming with the wings a very handsome bloom.

Awards of merit were awarded the following new varieties:—

Princess Maud of Wales.—A very handsome and brightly-coloured variety of salmon-pink shade, the well-formed and large standard being deeper coloured along its centre; the wings are paler than the standard, and the keel is white.

Maud Guest.—This variety is white, faintly flushed with mauve. The standard is large, and has a wavy margin. The suffrescence is developed on tall, stiff stems.

Horace Wright.—A fine, dark-blue coloured flower, almost purple. A useful addition to the dark coloured section. The above three varieties from Mr. H. ECKFORD, Wem.

Dora Cowper.—A not over-large flower of yellow and buff shades. Three flowers are seen in most cases on the peduncle.

Etta Dyke.—A very handsome white flower, said to be a sport from the well-known Countess Spencer, which variety it much resembles in form.

Elsie Herbert.—Said to be a cross between Dorothy Eckford and George Herbert. It is a large flower, with white ground suffused with faint rose. The standard is very large. The above three were shown by Mr. C. W. BREADMORE.

Queen of Norway.—A lavender-coloured flower of much merit, all the parts being large, especially the standard, which is wavy in outline. Three pips are seen on the truss. Shown by Mr. BOLTON.

NON-COMPETITIVE EXHIBITS.

Non-competitive displays of Sweet Peas were staged by the following exhibitors:—Messrs. R. H. Bath, Ltd., Wisbech (Silver Medal); Messrs. Cant & Sons, Swanley (Gold Medal); Messrs. Bakers, Wolverhampton (Gold Medal); Miss H. Hemus, Holdfast Hall, Upton-on-Thames (Silver-Gilt Medal); Messrs. Gilbert & Sons, Bourne, Lincolnshire (Silver Medal); Messrs. Carter & Sons, Ltd., Holborn (Silver-Gilt Medal); Messrs. Dobbie & Co., Rothesay (Gold Medal); Mr. Robert Sydenham, Birmingham (Silver Medal); Messrs. E. W. King & Co., Coggeshall (Silver Medal); Mr. J. Williams, Oxford Road, Ealing (Silver Medal); Mr. Robert Bolton, Warton, Carnforth, an unique arrangement of baskets of Sweet Peas in the form of an arch, with other baskets suspended; one of the prettiest exhibits in the show (Gold Medal); Mr. C. W. Breadmore, Winchester (Gold Medal); Messrs. G. Stark & Son, Great Ryburgh (Silver-Gilt Medal); Mr. H. Eckford, Wem (Gold Medal); Messrs. G. & A. Clark, Dover (Silver-Gilt Medal); and Mr. W. J. Unwin, Histon, Cambs. (Gold Medal).

CROYDON HORTICULTURAL.

JULY 4.—The thirty-ninth summer exhibition of this society was held on the above date in the grounds of Brickwood House, Addiscombe Road.

ROSES.

OPEN CLASSES.

There was seen a moderately large display of blooms, but the unfavourable weather prevailing when the plants started to grow seems to have had an injurious effect on the earlier flowers.

Twenty-four Roses, distinct.—This was a nurserymen's class, and the winner of the 1st prize was Mr. F. J. JEFFERIES, Rose grower, of West Croydon, who had in his exhibit capital blooms of Marchioness of Dufferin, Mrs. J. Laing, Mildred Grant, Capt. Hayward and Mrs. Sharman Crawford; 2nd, Mr. T. BUTCHER, who had especially good blooms of Ulrich Brunner, Etienne Levet and Marie Baumann.

The class for 12 Roses, of one variety, brought a creditable box of blooms from Mr. F. J. JEFFERIES.

Challenge Cup.—A Challenge Cup or Bowl Competition was open to Amateurs for 36 Roses in distinct varieties. The 1st prize fell to E. M. EVERSFIELD, Esq., Denne Park, Horsham, and it was noticeable that the Roses from the heavier soils of Sussex were finer and of more substance than those from off the lighter soils round Croydon and Reigate. The winning stand contained good blooms of Ulrich Brunner, Mad. G. Luizette, Mildred Grant, Alice Lindsell, &c.; 2nd, Mr. J. Salter (gr. to Mrs. HAYWOOD, Woodhatch Lodge, Reigate).

Twenty-four Roses, distinct.—Mrs. HAYWOOD was 1st here, the better blooms being Heinrich Schultheis, Mad. G. Luizette, Tom Wood, Florence Pemberton, and Marie Baumann, the same almost as those that secured her the second prize in the previously noticed class. 2nd, A. MORRIS, Esq.

Six Roses, distinct.—E. J. HOLLAND, Esq., Silverhall, Grange Road, Sutton, won the 1st prize. A bloom of Mildred Grant in this exhibit received the award of a Silver Medal.

Mr. E. M. EVERSFIELD was 1st for 12 Roses of one variety with Bessie Brown.

GROUP OF PLANTS ARRANGED FOR EFFECT.

The space allowed was a semi-circle measuring 17 feet × 10 feet: the 1st prize was awarded to Mr. Phillips (gr. to Col. R. W. INGLIS, Craigendowie, Reigate), with a pleasing arrangement of Codiæums, Caladiums, Odontoglossum crispum, Dendrobiums, Cattleyas, &c., in a setting of Adiantum, &c.; 2nd, Mr. C. Lane (gr. to E. H. COLES, Esq., Burntwood, Caterham), with a much more profuse display of flowering plants.

In the similar smaller class for a group of plants occupying an area of 7 feet × 6 feet, Mr. C. Brooks (gr. to Dr. St. G. C. REID, Brigstock House, Thornton Heath) won the 1st prize. The group contained many small flowering and foliage plants backed with tall Aralia Sieboldi, &c.

Group of Caladiums.—1st, Mr. J. Hale (gr. to F. LINK, Esq., Homedale Park, Hill Road, Croydon). Small plants to which the exhibitor, by crowding them together, had not done full justice.

Gloxinias were nicely shown by Mr. J. Lowry (gr. to Miss BLAKE, Duppas Hill Terrace, Croydon).

In the class for nine Ferns the 1st prize went to Mr. F. Bishop (gr. to E. D. MORTON, Esq., Bagbie House, Croydon). They were nice specimens in 6-inch pots.

Mr. F. BISHOP was also 1st for a group of Begonias; 2nd, Mr. E. Paxted (gr. to S. TAYLOR, Esq., Bramley Hill Side), Croydon.

The best six Fuchsias, averaging 3 feet in height, came from Mr. G. EDWARDS, Windmill Cottages, Shirley.

A class was provided for three flowering and three ornamental foliage greenhouse plants. The 1st prize was taken by Mr. C. LANE, with one Palm, two Codiæums, one Begonia, one Anthurium Scherzerianum, and one Brassia verrucosa. This exhibitor was also 1st for a specimen plant.

FRUIT.

The 1st prize for Black Hamburgh Grapes was taken by Mr. W. Mancy (gr. to A. BENSON, Esq., Upper Gatton Park, Merstham), with capital examples; the 2nd prize falling to Mr. F. Keep (gr. to J. T. MITCHELL, Esq., Bath Hill, Redhill).

Mr. W. LINTOTT was 1st with Foster's Seedling, the bunches being of moderate size.

Strawberries (five dishes) were shown of Trafalgar and Royal Sovereign. Cucumbers were fine and large, likewise Melons, and a few dishes of Peaches and Nectarines were remarked; Broad Beans were shown largely, also Peas and collection of vegetables.

BIRMINGHAM BOTANICAL AND HORTICULTURAL.

JULY 4.—The second special flower show under the auspices of this society was held at the Edgbaston Botanical Gardens on the above date, and was a pronounced success. No fruit was shown, and only one group of Orchids was staged. Of plants entered for certificates, awards of merit were given to two border flowers and one hybrid Orchid. The attendance of visitors during the latter part of the afternoon was very gratifying.

The KING'S ACRE NURSERIES, LTD., Hereford, furnished a table, 20 feet by 6 feet, with Streptocarpus, Roses, and Carnations. The strain of Streptocarpus was meritorious by reason of the freedom with which the large and shapely flowers were produced, and although the Roses had passed their best, flowers of the following varieties were good: Killarney, Liberty, Mrs. Ed. Mawley, Bessie Brown, and Gardenia. (Silver Medal.)

Messrs. JAMES RANDALL & SONS, Hatfield Nursery, Shirley, Birmingham, staged thirty-six vases of Tree Carnations, in which the best of the new and many old varieties were represented by large bunches of flowers arranged with their own foliage in an effective manner. A silver-gilt medal—the highest award—was unanimously given for this splendid exhibit. Messrs. RANDALL also received a cultural commendation for half a dozen large well-grown plants of Nephrolepis exaltata Piersoni.

Messrs. BICK BROS., Warwick Road, Olton, showed an interesting collection of Alpine plants, Violas, and hardy cut flowers. (Bronze Medal.)

E. MARTINEAU, Esq., West Hill, Edgbaston (gr., Mr. O. Brasier), sent six vases of Malmaison Carnations. (Vote of thanks.)

Messrs. GUNN & SONS, Brookfield Nursery, Olton, made an extensive display of Roses, in which several little known species and many decorative varieties were shown. (Silver Medal.)

Messrs. RICHARD SMITH & Co., St. John's Nurseries, Worcester, and Mr. J. H. WHITE sent hardy flowers. (Bronze Medal.)

The only group of Orchids staged on this occasion came from the Highbury houses of the Rt. Hon. JOSEPH CHAMBERLAIN, M.P., Birmingham (gr., Mr. J. Mackay). A few of the best things were Phalænopsis amabilis Rimestadtiana, Cattleya Gaskelliana alba, Lælio-Cattleya Aphrodite, and Dendrobium filiforme, bearing an abundance of long slender racemes of tiny greenish-yellow flowers. (Vote of thanks.)

Mr. C. H. HERBERT, Acock's Green, exhibited hardy flowers (Silver Medal), and HUGH MITCHELL, Esq., Mercote Hall, had Pansies and Canterbury Bells.

The largest and most representative display of hardy border and bulbous flowers came from Messrs. DICKSONS, Chester, who had English and Spanish Irises, Lupinus "Somerset" (lovely canary-yellow flowers), Liliums, and a dozen stately Delphiniums, of which the varieties named Persimmon, light blue, and Mrs. Chamberlain, deep blue, were the best.

From Messrs. BLACKMORE & LANGDON, Twerton-on-Avon, Bath, came a collection of double and single-flowered Begonias, arranged in vases and Bamboo stands. (Silver Medal.)

J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), sent a group of Schizanthus Wisetonensis and Delphiniums.

Messrs. JARMAN & Co., Chard, Somerset, showed New Centaureas and about 30 sprays of Zonal Pelargoniums. (Bronze Medal.)

AWARDS OF MERIT.

Lælio-Cattleya Aphrodite (Lælia purpurata × Cattleya Mendeli) from Messrs. CHARLESWORTH & Co., Heaton, Bradford. Sepals and petals unusually broad, pure in colour and of great substance; lip large, of rich velvety purple.

Centaurea The Bride from Messrs. JARMAN & Co., Chard, Somerset. The flowers of this new Sweet Sultan are nearly 3½ inches in diameter, white, semi-double, with deeply-cut petals.

Delphinium H. Smetham from Messrs. BLACKMORE & LANGDON, Twerton-on Avon, Bath. A strong-growing, much-branched spike of large semi-double, deep-blue flowers, tinted with purple.

SCOTTISH HORTICULTURAL.

JULY 3.—At the monthly meeting of this association, held at 5, St. Andrew Square, Edinburgh, Mr. D. W. Thomson, president, in the chair, a paper was read by Miss Barker, Corstorphine, on "Women Gardeners." Miss Barker, who has the distinction of being the first lady to address the association, said the suitability or unsuitability of gardening as an occupation for women had been so much discussed that it was difficult for most people to form a fair judgment on the subject. Excluding the heaviest work, there was no reason why a woman should not do well all that was required in a garden from the simplest work to the culture of the most exacting plant that could be raised.

CHESTER NATURAL SCIENCE AND CHESTER PAXTON.

THE members of these societies recently paid a visit to the summer residence of Colonel Evans-Lloyd (of Chester), at Moel-y-Garnedd. The gardens contain a fine collection of herbaceous plants and hardy flowering shrubs. Lupins, Centaurea montana, the beautiful Geranium armenum, Heucheras, Oriental Poppies in many colours, the grand Spiræa Aruncus, Globe Thistles, Inulas, Erigerons, Sea Holley, Delphiniums, &c., in great variety, were seen in the borders; Tropæolum polyphyllum covered a border with its glaucous leaves and curious flowers. Rodgersia podophylla, which is so difficult to establish, was well grown and flowering freely; but the great glory of all seemed to be a large shrub of the Ceanothus azurea, which was covered with a profusion of its small, light-blue-coloured flowers. On the way from Bala Station, the botanists of the party were fortunate in finding Meadow Rue (Thalictrum minus), Red Sandwort, Spurry (Spergularia rubra), Shoreweed (Littorella lacustris), Quillwort (Isoetes lacustris) and the Lesser Spearwort (Eleocharis acicularis). *George Paxton.*

MARKETS.

COVENT GARDEN, *July 11.*

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Calla æthiopica, per dozen ...	2 6- 4 0	Odontoglossum crispum, per dozen blooms	2 0- 2 6
Centaurea cyanus, doz. bunches...	2 0- 4 0	Pæonies, per doz. bunches ...	4 0- 5 0
— suaveolens ...	3 0- 4 0	Pelargoniums, show, per doz. bunches ..	3 0- 5 0
Coreopsis grandiflora, per doz. bunches ..	2 0- 3 0	— Zonal, double scarlet... ...	4 0- 5 0
Carnations, per dozen blooms, best American various ...	1 6- 3 0	Poppies (Iceland), per dz. bnchs.	1 6- 2 6
— smaller do. ...	1 0- 2 6	— Oriental, per bunch	0 6- 1 0
— Malmaisons ...	3 0- 8 0	Shirley ..	0 6- 0 9
Cattleyas, per doz. blooms ..	9 0-12 0	Pyrethrums, dozen bunches ...	2 0- 4 0
Eucharis grandiflora, per doz. blooms... ...	3 0- 4 0	Ranunculus, doz. bunches ..	4 0- 6 0
Gardenias, per doz. blooms... ...	1 6- 2 0	Rhodanthe, per dz. bunches ...	2 0- 3 0
Gladiolus, various, per dz. bnchs..	9 0-12 0	Roses, 12 blooms, Niphetos ...	1 0- 2 0
— The Bride ..	3 0- 4 0	— Bridesmaid ...	2 0- 3 0
Gypsophila elegans, per doz. bunches	2 0- 3 0	Kaiserin A. Victoria ...	2 0- 4 0
Iris germanica, per bunch	0 9- 1 0	— Caroline Testout	3 0- 5 0
— Spanish, per doz. bunches .	1 6- 3 0	— C. Mermet ...	1 6- 3 0
Ixias	2 6- 4 0	— General Jacqueminot	1 0- 2 0
Lilium auratum ..	2 6- 3 0	— Liberty ...	2 0- 6 0
— candidum, per bunch .. .	1 6- 2 0	— Madame Carnot .. .	2 6- 3 0
— lancifolium, rubrum and album .. .	2 0- 3 0	— Madame Chatenay	3 0- 6 0
— longiflorum ...	3 0- 4 6	Mrs. J. Laing	3 0- 5 0
Lily of the Valley, p. dz. bunches	6 0- 9 0	— from the open, various kinds, per dz bnchs.	3 0- 6 0
— extra quality	9 0-12 0	Statice, per dozen bunches ...	4 0- 6 0
Marguerites, white, p. dz. bunches	2 0- 3 0	Stephanotis, per dozen trusses	3 0- 5 0
— yellow, per dz. bunches ..	2 0- 3 0	Stocks (double white) per doz. bunches ..	2 0- 4 0
Mignonette, dozen bunches ..	2 0- 3 0	Sweet Peas, per doz. bunches ..	1 6- 5 0
Myosotis, per doz. bunches ..	1 6- 2 0		

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, per doz.	5 0-10 0	Galax leaves, per doz. bunches...	1 6- 2 0
— — medium, bunch ..	1 6- 2 0	Hardy foliage (various), per dozen bunches	2 0- 3 0
— — short sprays per bunch...	0 6- 0 9	Hardy Grasses, per doz. bunches ..	2 0- 3 0
— Sprengeri ..	0 6- 1 0	Ivy leaves, bronze	1 6- 2 0
Adiantum cuneatum, doz. bun.	4 0- 6 0	— long trails per bundle.. ...	1 0- 2 0
Berberis, p. bunch	2 6- 3 0	— short green, doz. bunches ..	2 0- 3 0
Croton leaves, per bunch	1 0- 1 6	Moss, per gross ...	5 0- 6 0
Cycas leaves, each	1 6- 2 0	Myrtle, per dozen bunches ...	2 0- 5 0
Fern, English, p. dozen bunches	1 0- 2 0	Smilax, per dozen trails	2 0- 5 0
— French, doz. bunches ..	3 0- 4 0		

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

	s.d. s.d.		s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0	Cyperus alternifolius, dozen ...	4 0- 5 0
Aralia Sieboldi, per dozen ..	4 0- 6 0	— laxus, per doz	4 0- 5 0
— larger . ..	9 0-12 0	Dracænas, per doz.	9 0-24 0
Araucaria excelsa, per dozen ...	12 0-30 0	Erica, per dozen...	24 0-26 0
Aspidistras, green, per dozen ..	18 0-30 0	— ventricosa magnifica ..	24 0-42 0
— variegated, per dozen	30 0-42 0	Euonymus, per dz.	4 0- 9 0
Asparagus plumosus nanus, doz.	9 0-12 0	Ferns, in thumbs, per 100 ...	7 0-10 0
— Sprengeri, doz.	6 0- 8 0	— in small and large 60's ...	16 0-25 0
— tenuissimus per dozen ...	8 0-10 0	— in 48's, per doz.	4 0-10 0
Begonias (tuberous), per dozen	5 0- 8 0	— in 32's, per doz.	10 0-18 0
Boronia elatior, per dozen	18 0-24 0	Ficus elastica, p. dz.	9 0-18 0
Bouvardias, per dz.	6 0- 8 0	— repens, per doz.	5 0- 8 0
Calceolarias, yellow	3 0- 4 0	Fuchsias, per doz.	4 0- 6 0
Chrysanthemum segetum .	3 0- 6 0	Heliotrope, per dz.	3 0- 5 0
Clematis, per doz.	8 0- 9 0	Hydrangea Hortensia, per dozen	8 0-18 0
— in flower ..	18 0-24 0	— Thos. Hogg ..	12 0-24 0
Cocos Weddelliana, per dozen	9 0-18 0	— paniculata ...	6 0-18 0
Coleus	3 0- 5 0	Kentia Belmoreana, per dozen	12 0-18 0
Crassula, hybrid, per doz ..	6 0- 9 0	— Forsteriana, per dozen ..	12 0-21 0
— larger size ..	18 0-24 0	Latania borbonica, per dozen ..	12 0-18 0
— coccinea ..	18 0-24 0	Lilium longiflorum, per dozen .	12 0-18 0
Crotons, per dozen	12 0-30 0	— lancifolium, per dozen ..	18 0-24 0
		Lily of the Valley, per dozen ...	18 0-30 0

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

	s.d. s.d		s.d. s.d.
Lobelia	4 0- 5 0	Petunias, double, per doz. ..	5 0- 6 0
Marguerites, white, per dozen ...	4 0- 8 0	— single (in 60's only)	1 6- 2 6
— yellow	15 0-18 0	Rhodanthe, per dz.	3 0- 5 0
Mignonette, p. doz.	4 0- 6 0	Roses, per dozen ..	12 0-18 0
Musk, Harrison's, per doz. ...	3 0- 5 0	Saxifraga pyramidalis, per doz.	12 0-18 0
Pelargoniums (Zonals), per dozen	3 0- 5 0	Selaginella, dozen	4 0- 6 0
— Ivy-leaved, per dozen	5 0- 8 0	Spiræa japonica, per dozen ..	5 0-10 0
— show	6 0- 9 0	Verbena, Miss Willmott, per doz..	6 0- 8 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apricots (French), per box ...	1 0- 1 3	Greengages (French), p box	2 6- 3 0
— ½ sieve	10 0 —	Lemons:	
Bananas, bunch:		— Messina, case	18 0-22 6
— No. 1 quality...	7 0- 9 0	— Naples, p. case	30 0-36 0
— No. 2 quality...	6 0- 7 0	Lychees, per box...	0 10- 1 0
— Extra quality...	8 6-10 0	Melons, each ...	1 0- 3 0
— Giants, per bunch	11 0-13 0	Nectarines, English	4 0-18 0
— Jamaica ...	4 6- 6 0	Nuts, Cobnuts, per doz. lb... ...	8 0 —
— Loose, per dz.	0 8- 1 3	— Brazils, new, per cwt. ...	15 0 —
Cherries (French), ¼ sieve... ...	3 6- 6 6	— Spanish, per bag	42 0-43 0
½ sieve... ...	6 9- 8 0	— Barcelona, per bag	24 6 —
— boxes	1 0- 2 0	— Monkey Nuts, per bag ...	18 0 —
— French, squares	2 0- 3 6	— Walnuts, dried, cwt.	35 0 —
— English, ½ sieve	5 0-12 0	— Chestnuts, Italian, per bag .	13 6-15 0
— ¼ sieve	3 6- 6 0	— Cocoanuts, 100	10 6-13 6
— English pecks from	3 9- 5 6	Oranges, per case:	
— Big. Napoleon	6 6- 7 0	— Murcia ...	16 0-18 0
— May Dukes ...	2 6- 3 0	— Jamaica ...	10 6-11 0
— (English), per ¼ sieve	5 6- 8 6	— Blood	9 6-11 6
— Elton Hearts ..	7 6-10 6	Peaches (English), per dozen ..	4 0-18 0
— May Dukes ...	4 6- 5 6	Pineapples, each ...	2 10- 5 0
— Big. Napoleon	13 0-14 0	— French, p. box	1 0- 1 10
Currants (English), red, per handle	2 6 —	Raspberries, per punt.	0 6- 0 8
— ½ sieve (French)	6 0- 7 0	— per peck ..	2 0- 3 6
— black, ½ sieve...	6 3- 6 9	Strawberries, Kent, peck ...	2 0- 4 0
— English pecks	3 0- 3 6	— gallon	1 3- 2 0
— ½ sieve... ...	6 0- 7 0	— punnetts ..	0 6- 0 9
Figs, per dozen ...	2 0- 8 0	— French, crates (4 baskets) ...	7 6-10 0
Grapes (English), Black Hambro, per lb.	0 10- 1 6	— Southampton, per basket ...	1 0- 2 6
— Alicante ...	1 3- 1 9		
— Colmars ...	1 6- 2 0		
— English, Muscat, per lb. ...	1 6- 4 0		
Gooseberries (English), ½ sieve ...	3 0- 4 6		

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, Green French, p. doz.	2 6 —	Mushrooms (house) per lb.	0 9- 1 3
Beans, Broad, per packet	0 6 —	— Buttons, per lb.	0 8- 1 0
— Broad (English), per bush.	2 0 —	Mustard and Cress, per dozen pun.	1 0- 1 6
— Home grown, per lb	0 8- 0 10	Onions (Egyptian), bag	4 6- 5 0
— French, p. pad	4 0- 4 3	— pickling, per bushel.. ...	3 6- 4 0
— French, per ½ sieve	4 6- 5 0	— French, ½ bag..	2 3 —
— Channel Island	0 8- 0 10	— Spring, dozen bunches ...	1 0 —
Beetroot, bushel ...	1 0 —	Parsley, 12 bunches	1 0- 1 6
Broccoli, sprouting, per bushel	1 6- 1 9	— bushel.. ..	2 6 —
per doz ...	1 0- 2 0	Peas (French flats)	3 0- 6 0
Cabbages, Spring, per bag ...	1 6 —	— English, per bushel	4 0 —
— red, per bushel	1 6- 2 0	Potatos (new):—	
Carrots, French pad	3 0 —	— Channel Island Kidneys ...	0 2½- 0 3
— per bag, unwashed ...	2 0- 2 6	— Jersey, cwt. ..	6 6 —
— new, per dozen bunches ...	4 0 —	— St. Malo, cwt.	6 6 —
— French ...	3 0- 4 0	Rhubarb, per doz. bundles ...	2 6 —
Cauliflowers, per tally ..	3 0-10 0	Spring greens, per bushel... ..	1 3 —
Chow Chow, per dozen .. .	1 6- 2 0	Salsafy, per dozen bundles ...	4 0 —
Cucumbers, dozen	2 0- 2 6	Tomatos:—	
Endive, per dozen	1 4- 1 8	— English, per lb.	4 6- 5 0
Horseradish, foreign, per dozen bundles	20 0-21 0	— small selected	4 0 —
Leeks, 12 bundles	1 6- 3 0	— Seconds, per 12 lbs.... ..	2 6 —
Lettuces, Cos, per dozen	2 0 —	Turnips, per doz. bunches ...	1 0- 1 6
Marrows, per doz.	3 0- 4 0	— bags	1 0 —
Mint, per dozen ...	2 0- 3 0	Turnip Tops, bush.	1 0- 1 6
		Watercress, per doz. bunches ..	0 6 —

REMARKS.—English Tomatos are cheaper owing to the warm weather. Strawberries are also cheaper. Supplies from the Southampton district are nearly finished. English and foreign Gooseberries and Cherries are plentiful. Good Bananas are rather scarce. The vegetable and fruit trade generally is quiet. *Covent Garden Market, Wednesday, July 11, 1906.*

POTATOS.

Lincolns, 70s. to 80s.; Bedfords, 65s. to 70s.; Kents, 70s. to 90s.; Jerseys, 5s. 6d. to 6s.; Cherbourgs, 5s.; Dutch Rounds 3s. bags; St. Malo, 5s. to 5s. 6d. *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

The busy season is now over, and many stands remain empty. There is still a good supply of flowering plants. Show, Zonal, and Regal Pelargoniums are very good, but the best Ivy-leaved sorts are nearly finished for the season. Marguerites, both yellow and white varieties, are remarkably good, but trade in them has fallen off. Hydrangea Hortensia and H. paniculata grandiflora are still good. Liliums are not so plentiful; very good L. longiflorums are seen. Spiræa multiflora compacta is one of the best kinds, and

S. Silver Sheath is also nice. Fuchsias vary much in quality; some are excellent. Chrysanthemum segetum is seen from several growers. Coreopsis is now coming from Mr. Lewington; it is a pity this plant is not obtained earlier in the market, but I find all who try it fail, for the plants grow too tall and the blooms will not open. I believe this difficulty might be got over by saving seed from the earliest flowers, and growing the plants in light airy houses. Crassula coccinea and the hybrid varieties are still plentiful and good. Among roses some good Ramblers in small pots are seen, also H.P.'s, but they are not numerous. Foliage plants are plentiful and vary little in price, but it would not be safe to rely on the markets for best Crotons (Codiæums) and Cordylines (Dracænas).

CUT FLOWERS.

Roses continue over plentiful, especially those from the open ground which arrive early in the morning. Best blooms with long stems are not numerous. Carnations are plentiful and good in all varieties. Even at this late season the American varieties take the lead and have much depreciated the value of "Malmaisons," which usually make good prices during the London season. Hardy flowers are seen in great abundance, and now that hawkers are giving their attention to fruit, they do not clear well. I have never before seen Sweet Peas in such great abundance, and there must be many wasted, for at closing time large quantities are left over, and they are of no use for sale the next day. Liliums and other choice flowers are rather short, and prices vary much from day to day.

LA TRIBUNE HORTICOLE.—*Soyez la bienvenue* is the welcome to be extended to this the latest accession to the horticultural Press. It is published at 10 centimes (1d.) in Brussels. At present there is no other weekly publication of a similar character in Belgium. There are about 7,000,000 of people in that kingdom, 20 cities comprising among them representatives of remarkable energy, industry, ability and taste. Besides, horticulture may almost be reckoned as a speciality in Belgium, so that the success of the journal should be assured. In the first number we notice a description of a new Brasilian Orchid by M. DE WILDEMAN, Pleurothallis gracilis, var. Binoti. A supplementary illustration gives a representation of a new Cattleya, C. Mendeli var. Frau Lina Abeken, in which the segments are white, flushed with rose, the lip white with a magenta-coloured blotch at the base. Reports of the two Brussels societies, the Royale de Flore and the Royale Linnénne, will be given in the *Tribune* from time to time.

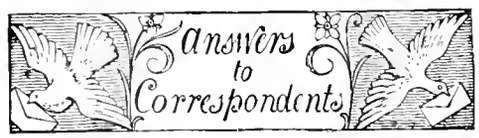
"NOS ARBRES."—Under this title Mr. CORREVON has just issued an illustrated treatise on the trees of Switzerland, to which we shall take an early opportunity of referring more at length.

THE FLORA OF TROPICAL AFRICA.—A new part of *The Flora of Tropical Africa* has lately been issued. It comprises the remainder of the Scrophulariaceæ by Messrs. HEMSLEY AND SKAN, the Orobanchaceæ and Lentibulariaceæ by Dr. STAPF, the Gesneraceæ by Mr. J. G. BAKER and C. B. Clarke, the Bignoniaceæ by Mr. SPRAGUE, the Pedaliaceæ (Pedalineæ) by Dr. STAPF. This part completes the fourth volume and is provided with a full index.

AMERICAN PÆONY SOCIETY.—The formation of a special society is no novelty in this country. What is noteworthy, however, is that such a society should be associated with a university. We can scarcely conceive our sedate Universities, such as Oxford or Cambridge, interesting themselves seriously in such, as they would judge, frivolous pursuits as Pæony growing. Our American cousins take wider views of the functions of a university, and so we find that the Pæony Society is to meet at Cornell University next year, that a large collection of Pæonies, nearly 2,000 varieties, is being grown and carefully studied in the college grounds, and that one of the advanced students is preparing a thesis on Pæonies for his doctor's degree in the university. The robes of a doctor of music in this country are gorgeous enough—what must be the apparel of a doctor of Pæonies? That the Pæony is not universally appreciated in America was illustrated by the fact that some time since we were dining at a public table decorated with bowls of Pæonies. The company consisted largely of Americans, to whom the flowers in question seemed to be quite unknown. We observe that among the visitors to the recent Pæony Exhibition at Boston were Mr. and Mrs. HUGH DICKSON, of Belfast.

ENQUIRIES AND REPLIES.

"TO CLEAN MARBLE, &c."—If *Hortus* would apply a solution of potash [of what strength?] [powdered] pumice-stone and whitening, and after 24 hours wash the vases, they should be clean. *N. S.*



*** *We are compelled to hold over a report of the Hanley Flora Fête, and other matters until our next issue.*

BEGONIAS AFFECTED WITH THRIPS: *J. W.* Dip the foliage in tobacco water and endeavour to promote a healthy growth in the plants by favourable cultivation.

CARNATION SEEDLING: *G. P.* The seedling is not so good as Mrs. Sinkin and many others already in commerce. The calyx is of the worst type, splitting badly. The Carnation and the Pink are such near relatives that crosses between them should excite little wonder. Mr. Douglas has even crossed the Sweet William (Dianthus barbatus), with a Carnation. However, you should preserve the seedlings, as they often improve in the second or third season.

CORRECTION.—In the note on Celmisias, on p. 2, line 17, the word "Rockery" was, by a printer's error, made to read "Valley."

CYMBIDIUM TRACEYANUM: *F. T.* There is no fungus present. The injury, known as "spot," is due to the deposition of moisture on the leaf during the night. This is caused by damping down the floor and stages late in the day, combined with lack of sufficient ventilation and decrease of atmospheric temperature.

FLIES: *J. G. E.* The flies are specimens of one of the "ruby-tailed flies" (Chrysis ignita). The mud nest was no doubt made by one of the solitary wasps belonging to the genus Odynerus which fills its nest with the larvæ of various insects as food for its grubs. The "ruby-tailed flies" do not make nests, but lay their eggs in the nests of the Odynerus, thus playing a part similar to the Cuckoo. This explains the presence of more than one kind of larva in the nest.

GRAPES: *Dulwich.* The Grapes are perfectly free from fungi, the markings being due to scald or contact with sunlight before the fruit has become dry on the surface.

GRAPES SPOTTED: *F. T. and M. O. Y.* The berries are affected with the "spot" disease. Burn any that are diseased and I spray the remaining ones with liver of sulphur—½ ounce to 1 gallon of water.

INSECTS: *J. C.* and *S.* The creatures in the glass phial are the common aphis or green fly at a particular stage in their development.

MUSCAT OF ALEXANDRIA GRAPES: *J. G. H.* The disease is that known as "Browning." See answer to *N. W.*, p. 116.

NAMES OF PLANTS: *W. W.* 1, Spiræa Filipendula; 2, Centaurea montana; 3, Erigeron speciosus; 4, Tradescantia virginica; 5, Scabiosa or Cephalaria; 6, Eryngium alpinum.—*S. Spieger.* 1, Priva tuberosa; 2, Zephyranthes sersilis; 3, Either a variety of Dianthus scaber or an undescribed species.—*R. S.* Lathyrus rotundifolius.—*W. W.* 1, Rubus, not recognised: no flowers present. The Japanese Wineberry is Rubus phænicolasius; 2, Primula, probably P. mollis; 3, Ruellia Portellæ; 4, Geranium pratense var.; 5, Lupinus nanus.—*J. McL.* 1, Veronica spicata; 2, Solanum Dulcamara; 3, Linum perenne; 4, Euphorbia Lathyris, the Caper Spurge; 5, Mimulus syn. Diplacus glutinosus; 6, Polygala myrtifolia grandiflora syn P. Dalmaisiana; 7, Pedicularis sylvatica.—*G. B.* 1, Poterium Sanguisorba; 2, Genista Scoparia.—*G. M.* 1, Not known; 2, Eryngium alpinum; 3, Campanula persicifolia; 4, Lupinus ornatus; 5, Iris pseudoacorus; 6, Chrysanthemum maximum; 7, Sidalcea malvæflora.—*J. W.* 1, Photinia serrulata; 2, Cassinia fulvida; 3, Ephedra nebrodensis; 4, Ruscus racemosus.—*Dunneford.* Trichopilia coccinea.—*D. S. G.* Tradescantia virginica.—*J. & Co.* Stachys lanata.—*S. J. H.* 1, Thuya dolabrata; 2, Thuya occidentalis; 3, Retinospora filifera of gardens; 4, Cupressus nootkænsis variegated; 5, Retinospora plumosa of gardens; 6, Cupressus Lawsoniana.—*J. G., Wimborne.* Hæmanthus puniceus, not a valuable species.—*J. B., Stockport.* The partly decayed flower is probably Cattleya Mossiæ. The damage was probably caused by excessive moisture and not sufficient ventilation.—*F. E., Hants.* 1, Selaginella lævigata, often called S. cæsia arborea; 2, Selaginella plumosa: 3, Selaginella flabellata; 4, Selaginella Wildenovi. The Lavatera was attacked by fungus, probably in the soil.—*P. M.* Apparently Echium vulgare, but specimen insufficient and shrivelled.—*G. R. D.* 1, Sisyrhynchium Bermudianum; 2, Artemisia abrotanum; 3, Epilobium angustifolium.—*T. W., South Wales.* Cupressus funebris, in its two stages of growth; the red colour is quite normal.—*A. C. H.* Anchusa italica.—*L. H., Wycombe.* 1, Campanula glomerata; 2, Agrimonia Eupatoria; 3, Galium palustre; 4, Melampyrum pratense; 5, Primula Forbesi: 6, Sedum album.—*W. H.* Glaucium luteum, orange-coloured variety.—*W. Y.* 1, Acalypha Macafeeana; 2, Bignonia cherere; 3, Alstrœmeria aurea; 4, Hemerocallis fulva; 5, Campanula pyramidalis; 6, Polemonium cœruleum; 7, Phalaris arundinacea variegata; 8, Centranthus ruber.—*H. H.* 1 and 2, varieties of Thunia Veitchiana; 3, Thunia Marshalliana; 4, Thunia Bensoniæ; 5, Brassia candata.—*H. E.* 1, Adiantum cuneatum grandiceps; 2, Adiantum concinnum; 3, Adiantum Capillus Veneris; 4, Adiantum Pacotii; 5, Adiantum decorum; 6, Acalypha hispida.—*Japonica.* Epidendrum oncidioides, Aspasia variegata.—*Ballyarthur.* 1, Mitraria coccinea; 2, Taxodium distichum; 3, Liriodendron tulipifera; 4, Sequoia sempervirens; 5, Azalea pontica; 6, Daphne Laureola; 7, Spiræa chamædrifolia.

NECTARINES INJURED: *J. W.* The damage is a physical one—there is no fungus present. The fruits appear to have been scalded by the sun when they were wet. See that they do not receive injury also from the wires.

PEAS DISEASED: *C. P.* Your Peas are badly attacked with a brown mould, Colletotrichum Lindemuthianum (Briosa and Cavara). Badly diseased plants should be removed and the remainder sprayed with Bordeaux mixture or potassium sulphide. A damp situation or sowing seeds too thickly would favour the disease. Do not save seeds from infected plants.

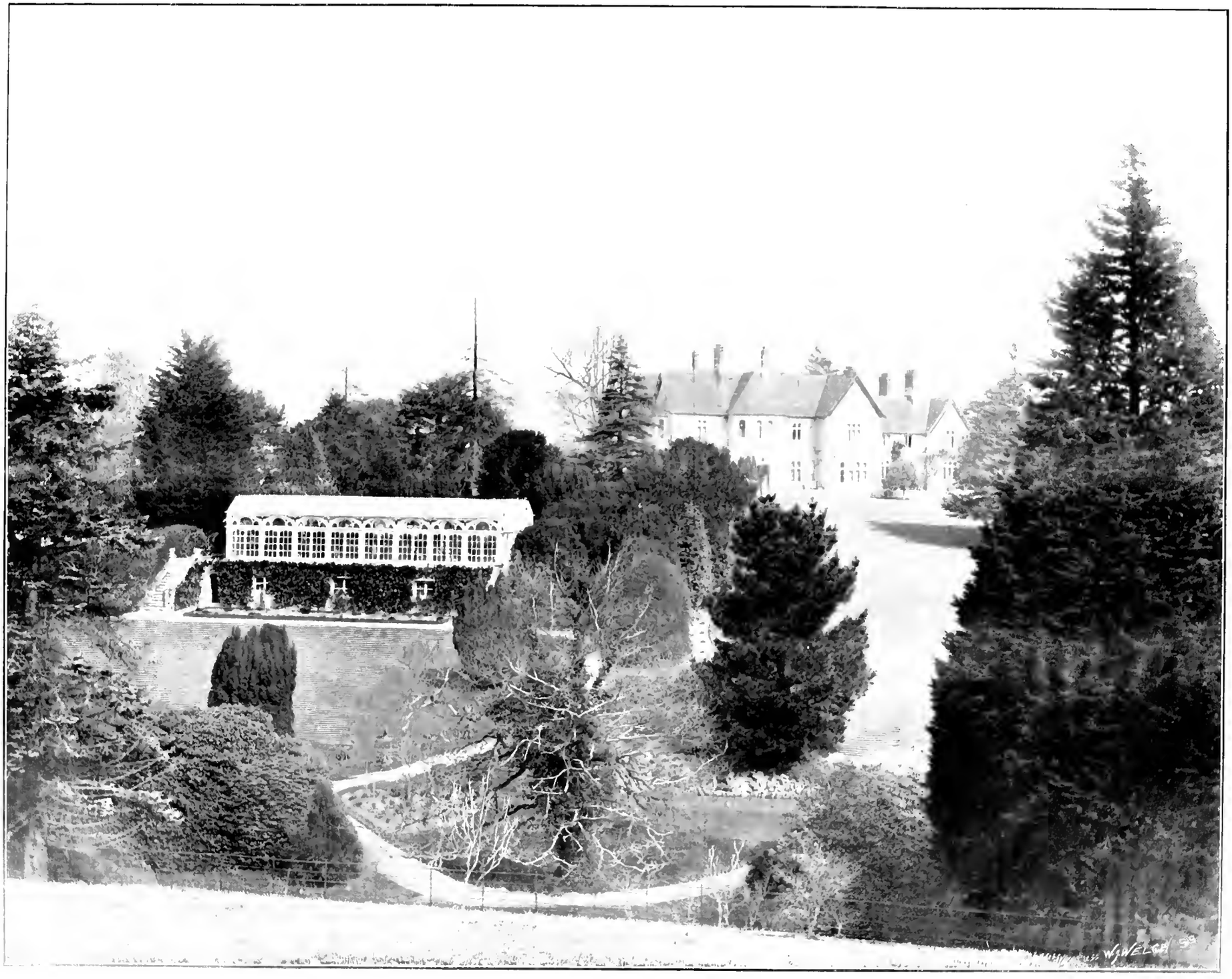
POTATO: *J. T. M.* The plant is badly attacked by the common Potato fungus Peronospora infestans. Spraying with a fungicide is very helpful at an earlier stage in preventing a serious attack, but you can do nothing for the present crop beyond removing the haulm as soon as it is dead and burning it. Lift the tubers as soon as they are ready, that those which are diseased may be separated from those which are not.

ROSE GRUB: *J. C. & Sons.* The edges of the Rose leaves are rolled by grubs of one of the "sawflies" (Blennocampa pusilla), a by no means uncommon insect, but one which we have never known to occur in such numbers as to be the cause of any real injury to the plants. The most effectual way of destroying the insect is by picking off the affected leaves and burning or burying them. Insecticides are of no use.

STRAWBERRIES INJURED: *E. N., C. S. G.* The injury has been caused by mice, which have eaten the seeds or pips. We have received similar injured fruits from the forcing houses earlier in the season.—*A. G. T.* The fruits appear to be rotting from dampness. There is no indication of disease.

TOMATO DISEASED: *R. F. and Another.* The fruits are affected with "spot" disease of Tomatos, Cladosporium lycopersicæ. Burn all diseased fruits, and spray the foliage and remaining fruits with Bordeaux mixture. See *Calendar of Garden Operations*, p. 45, obtainable from our Publishing Department, price 7½d. post free.

COMMUNICATIONS RECEIVED.—L. C.—G. B. & Co.—W. B. H.—W. I.—E. H. W.—J. H. V., Berlin.—C. T. D.—E. W., Oundle (photos).—W. E. G.—F. L.—W. J. M.—W. C. B.—F. A. W.—J. H. D.—H. Gillett.—W. B.—R. T. H.—H. F. McM.—W. H. & L. C.—J. McD.—J. P.—G. R.—Cardiff Hort. Soc.—M. Correvon, Geneva—G. D.—J. L.—R. H. W.—W. J. W.—A. L. F.—J. S.—F. S.—B. M. S.—H. G. P.—R. B.—S. B & Sons—Trehane—J. R.—F. W. G.—W. K.—T. H. S.—L. C.—A. B.—F. B.—D. R. W.—P. P.—J. O'B.



CANN HOUSE, PLYMOUTH, THE RESIDENCE OF H. W. GRIGG, ESQ.

Photo: S. W. Adam Fitzgerald.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,021.—SATURDAY, July 21, 1906.

CONTENTS.

ILLUSTRATIONS.

THE ROSE SEASON.

OWING chiefly to adverse atmospheric influences Roses, even in the most congenial situations, have demanded abnormal attention this year. The insidious Rose-caterpillar and the prolific green fly have had, in such a semi-tropical season, an extensive dispersion. The former was well compared, by the late Dean Hole, of Rochester, to a burglar who hides himself during the day in the shrubbery before he makes his nocturnal attack upon the silver in the dining-room.

But the devices of this monstrous regiment of insects can be easily discovered by the assiduous cultivator, who generally knows from long experience where to find his secret enemy, safely concealed—as it doubtless imagines—between two carefully glued leaves. My invariable practice is to detach and then isolate his leafy habitation, without depriving him of his life. After all, this insect, however destructive, is only obeying the instincts that Omnipotence has given him, and knows not what he does. In the case of the innumerable green fly no mercy is possible, if the foliage is to be kept in a healthy condition. Perfect flowers are impossible if the vitality of the embryonic buds is undermined.

Roses, nevertheless, are much finer this season than most cultivators could reasonably have anticipated. Perhaps an exception may be made in the case of the more tender Noisettes and Teas, many of which, such as L'Ideal, Madame Pierre Cochet, Maréchal Niel, Anna Olivier, William Allen Richardson, The Bride, and Madame de Watteville have unquestionably suffered much; and especially where, as in many gardens I could indicate, they have been utterly neglected. On the other hand, such varieties as the creamy-white Devoniensis, which is exceptionally beautiful at my study window, Madame Alfred Carrière, Bouquet d'Or, Papa Gontier, and Corallina, have never been more luxuriant in their floral beauty than they are this year. The lovely and sweetly-fragrant hybrid Noisette, to which I have just referred Madame Alfred Carrière—is at present flowering in my garden through a hawthorn hedge at a height of 13 feet; while Margaret Dickson, the Queen of Irish Roses, has attained an equal eminence on the southern wall of this manse.

In the great hybrid perpetual class, such lustrous crimsons as Duke of Edinburgh, Charles Lefebvre, Horace Vernet, A. K. Williams (whose first flower-buds, as usual, proved hard and abortive), Lady Helen Stewart, Duke of Teck, and those recent fine introductions from Dickmont and Newtownards, viz., F. B. Clark, Hugh Dickson, and Charles J. Grahame, are in flower. F. B. Clark, which Dean Hole would doubtless have characteristically described as "a bright, dark Rose," has already achieved a great reputation. Etoile de France, its Continental rival in renown, has not yet in my garden unfolded its full charms; but I can certify that it is in bud-form a supreme beauty, of rich maroon colour, and uniquely artistic. The grandest of all the hybrid perpetuals, whose satin-white flowers are seldom less than six inches in diameter, Frau Karl Druschki, sometimes more expressively entitled La Reine de Neige, is already conspicuous, *luna inter minores ignes*, by the purity and splendour of its blooms. Clio and Margaret Dickson, two varieties of quite inestimable value, whether as regards their remarkable growth or their floral achievement, are also grandly sustaining their great reputation. La France and Caroline Testout, Clara Watson, Viscountess Folkestone, and Madame Pernet Ducher are as florally effective as in former years. Among modern Roses, Florence Pemberton is especially fine.

That exquisite semi-double, so-called "Austrian Briar" Rose, Rosa Harrisoni, which has of late received well-deserved attention from the *Gardeners' Chronicle*, has been extremely beautiful and luxuriant this season. Grown, as it is invariably here, in artistic association with the brighter forms of the Penzance Briars, it is undoubtedly one of the loveliest of all Roses, of charming texture, and delicately refined. *David R. Williamson, Manse of Kirkmaiden, Wigtonshire, Scotland.*

OLD AND NEW EXHIBITION ROSES.

TO those who remember the exhibition of Roses many years ago in St. James's Hall, the comparison with the exhibition this year is interesting, though it may bring a shade of regret at the disappearance of many old favourite Roses. That is amply counterbalanced, however, by the wonderfully fine additions which later years have brought to the lists of excellent varieties: the gain in diversity of tints, in size and substance of the blooms, and in constitutional vigour has been so marked.

In one of the best lists of Roses for the present year 343 varieties are enumerated under the heads of hybrid perpetuals, hybrid Teas, and Teas and Noisettes. Of these 43 are new and hardly sufficiently proved, except in a few instances, for inclusion amongst established exhibition Roses. In the hybrid perpetual class 94 varieties are described, 48 of which have been raised since the National Society began its career. Of the remaining 40 that were the principal Roses in the section before 1877, with others that have been quite discarded, I only noted 10 as well represented in a few classes at the National Society's Show in the Royal Botanic Society's Garden this year. These were Alfred Colomb (1865), Charles Lefebvre (1861), Xavier Olibo (1864), three of Lacharme's productions, Duke of Edinburgh (Paul and Son, 1868), Duke of Wellington (Grainger, 1864), Dupuy Jamain (1868), Fisher Holmes (E. Verdier, 1865), Francois Michelon (Levet, 1871), Prince Arthur (B. R. Cant, 1861), and A. K. Williams (Schwartz, 1871). Of these the blooms shown were fully up to the highest quality seen in the old days, though they suffered somewhat in comparison with the giant blooms of the present time.

The hybrid Teas present a far more remarkable contrast, as when the first National Show was held the only two varieties that were recognised in this group were Captain Christy (Lacharme, 1873), and La France (Guillot, 1867), while of these I only remarked the latter in a few winning collections. Yet in the list referred to 100 varieties are described, and a considerable proportion of these were included in the exhibition.

Amongst Teas and Noisettes great changes have also taken place; out of 100 varieties catalogued 23 only were in cultivation before 1877, and of these I found but five at the exhibition a fortnight ago, namely, Countesse de Nadaillac (Guillot, 1871), Marie Van Houtte (Ducher, 1871), Niphetos (Bougere, 1844), Souvenir d'Elise Vardon (Marest, 1854), and Souvenir d'un ami (Defougere, 1840). The old Safrano and Homer, which are still favourite garden Roses, I did not observe in any of the prize stands.

Out of the total of 343 varieties in the three sections named it therefore appears that 73 date from years prior to the work of the National Society, and 270 have been introduced since, and a very large proportion of the blooms shown represented the later roses. Thus in a period of 30 years the great majority of Roses grown at the present time for exhibition purposes have been raised, including the whole of the British seedlings, from the late Mr. Bennett's time to the magnificent modern productions of Messrs. A. Dickson and Son, of the two Paul firms, and of those at Colchester. It is a surprising result, and there can be no doubt that the stimulus imparted to Rose growing and showing by the National Society has exercised a material bearing upon the advance. It has been my fortune to inspect many of the metropolitan and provincial exhibitions since the first national Rose exhibition held at St. James's Hall in 1858, and they have always been invested with the deepest interest, always varied, and also, let it be added, always well managed. *L. Castle.*

ORANGERIES.

In spite of the great development in plant culture under glass in recent years, how seldom are Orangeries mentioned? To my mind there is room for more of them. I do not mean copies of the semi-dark structures once so general in gardens, although Orangeries may, architecturally speaking, be of a somewhat heavier character than houses put up for most other special purposes. My ideal Orangery would be one directly accessible from the residence, of which it should form a part. In shape it should be either oblong or square, preferably the former. The sides and ends should be upright and not less than, say, 12 feet to the eaves of the roof. It would be best if the longest side faced the south, which, with ends, should be glazed to, say, within 2 feet of the stone, concrete, or brick walls that carry the whole building. The side facing north should not be glazed to more than one-third of its depth, but in order to keep the internal temperature from sudden fluctuations during the winter months, ventilation should be arranged for just under the eaves of the roof, and might take the form of narrow lights hung horizontally all around. If bottom ventilation be thought advisable, it may be arranged for in the basal walls, being careful to have the internal openings in direct contact with the water pipes to be fixed all around. Sufficient pipes and boiler power would be necessary to keep the internal temperature up to 55° in the winter without too hard firing. The roof should be a flattish span or spans, according to the space covered, avoiding, as far as possible, lanterns, domes, &c., which, while offering no cultural advantages, have a great tendency to lower the internal temperature in cold weather. It should, above all things, be as nearly drip-proof as is possible. Personally I would have the floor space all open and paved or tiled with some suitable material.

I need not go any further into constructional ideas, as doubtless any of our leading horticultural builders would gladly supply good plans if called upon to do so. Experience has proved to me that a house erected on something like the lines here shown is suitable for Orange tree culture and other plants that may be associated with them.

This brings me to the pith of my subject. My first heading was Orangeries and Palmetum; but, knowing that these notes were going to the *Gardeners' Chronicle*, and not to a lay paper, I struck it out and began again. From the outset I had (or thought I had) an instinctive idea that no one would put up merely an Orangery, as being too formal and stiff in these days of a more free and better taste in horticultural matters. Hence the idea of Palmetum. What more congenial companions could there be in the vegetable world than a well-arranged mixture of some of the better strong-growing Palms and well-grown specimen Orange trees in full fruit seen during the dull months from mid-October to mid-March? Imagine a house built on the lines given, and, say, 60 feet in length by 20 feet in width. On each side of the central path match pairs of specimen plants of Rhaphis flabelliformis, Kentia Belmoreana, and Oranges in variety in full fruit. I am careful to say "in variety," as I would not confine myself to edible oranges.

Close to where I am writing these notes there is a nice young tree of the Taranto Shaddock, full of fruit. The effect betwixt these fine pendent golden fruits and the green, healthy leaves of the tree, with a background of young Kentias, would be, to say the least, very inspiriting during the dull, foggy days of November. I would have all the occupants named grown in matched pairs of plant-tubs, now so much more handsome and come-at-able than those in days gone by. What more delightful retreat than such a house in the dull, dark days or long nights of winter? The plants named would, at that time, be perfectly happy in a temperature, both as to heat and moisture, congenial to its human occupants. Seats and rugs might be placed on the floor wherever required for pleasure and convenience. Nowadays, when the fruit and plant-houses are, in many cases, erected close to the dwelling-house, what a nice vestibule such a structure as I have suggested would be to them. There would be no fear of too much moisture being in direct contact with the mansion, as is the case with ordinary conservatories filled with a miscellaneous collection of flowering and foliage plants requiring water on most days even in winter.

I have described the cultural details of the Oranges and Palms suggested, as no doubt those who are in a position to erect such a building would have some specimens by them. In no case would I think of commencing with ordinary sized plants, as it would take some years before any good effect was enjoyed.

I may here mention that the internal atmosphere of houses erected with upright sides and ends is quite different from that in an ordinary span or lean-to greenhouse, even where the internal temperature is equal. There is an absence of that clinging stuffiness in the former nearly always present in the latter when the temperature exceeds 55°.

As bearing on my subject, I may mention in closing that we sent in last season dessert fruits of Embiguo or Navel Orange, which, I am told, were very good, one thing in their favour being freedom from "pips." It is a free-fruiting variety. *Henry J. Clayton, Grimston Garden, Tadcaster.*

FOREIGN CORRESPONDENCE.

AUS DEUTSCHLAND.

In Cologne the main street—Ringstrasse—as in some other continental cities, occupies the site of the old fortifications encircling the town. It is 2½ miles long and planted with Limes, an American type of Elm, Planes, and Horse-chestnut—none very good. Sycamore is also seen, and there is one avenue of the purple form. Such trees as Judas tree, yellow and red Horse-chestnut, are fine, and in one square two Catalpas—no doubt *C. speciosa*—are 40 feet high and 20 to 25 feet through. The chief public gardens are the Zoological and the Flora—neither very remarkable.

The country from Cologne to Berlin for the first 100 miles or so is bare of vegetation, but covered with furnaces and factories. The landscape round Essen as far as the eye can reach is black with the smoke of countless chimneys. Nearer Hanover the land is systematically planted with Scotch Pine and Birch, and the Pine may be seen in every stage from the planted seedling to the cut log in the railway truck. Much of the land is cultivated, chiefly with cereals, but Potatos are also a main crop. Asparagus and Turnip from time to time also appear. The villages are freely planted with trees, and standard fruit trees sometimes line the country roads in mid-Germany.

BERLIN AND ITS VICINITY.

Berlin is a fine city, covering 25 square miles, occupying the whole valley of the Spree. It is probably the first manufacturing town of continental Europe. The Thiergarten, 630 acres, is the private property of the Crown, and the Sieges-Allee is on a grandiose scale. The major portion is left as natural forest; the large areas between the roads—running in all directions—thick with magnificent trees. No park that I have seen in the old or new world in any way approaches this. Oak, 80 feet to 100 feet high, by the thousand, young and vigorous, will last another century. The trees are so closely planted that they have formed straight and even stems, each and all splendid "sticks." Limes and Poplars at their best, and Ash with stems 4 feet to 5 feet through—giants on the forest-carpet. Beech is rarely seen, and it is doubtful if Beech can be excelled outside several of certain private estates in England. The public are not allowed to walk on the grass, which is apparently always cut with the scythe. The Column of Victory is isolated and approached by four walks, each bordered by lines of thorns. Undergrowth is luxuriant beneath the shade of the taller trees, and consists largely of Snowberry, Elder, Alder, and Nut. Virgilia lutea is to be seen in vigour; Tulip trees, 70 feet to 80 feet; and on the stately mansions facing the park the Dutchman's Pipe (Aristolochia Sipho) 20 feet to 25 feet high.

The Zoological Gardens are extensive, and there are several good specimens, two male ostriches being quite exceptional. The main entrance is in the Chinese style, and the buildings in some instances are built to represent the form of structure prevalent in the country of which the animal it shelters is a native—the bison house in Red Indian style, Indian elephant shed in the style of a native temple. The birds are in no way comparable with those in London or the Jardin d'Acclimatation at Paris.

The Royal Botanical Garden, Dahlem, Steglitz, bei Berlin—director, Herr W. Perring—is quite new and as yet incomplete. It contains many of the plants removed from the old garden formerly in the Potsdamstrasse. The soil is not congenial, and at present there is throughout the garden no shade whatsoever. The nomenclature of the plants is not in every case that accepted at Kew, but is said to be based on the original authentic name. Large sums have already been spent on glass and iron erections, and more houses are in course of construction. For the completion of this garden many years will be required. The plants are in the main arranged according to their geographical source, and planted accordingly. It is *streng verboten* for any of them to die. The disregard of this autocratic order is, however, becoming rather obvious, as plants in several countries within a limited area grow naturally at greatly varying altitudes.

THE SPATH NURSERIES.

Herr Späth fifth head of the firm in direct line, owns the largest nurseries in Europe, 800 acres in extent, with a staff of 500 hands. The establishment is decentralized, and managed on the basis of individual responsibility and with that thoroughness so characteristic of the German nation.

The arboretum extends to the private residence, and is entered between two trees planted by Von Moltke and Bismarck respectively. The collection of deciduous trees and shrubs is very complete, but, with few exceptions, coniferous subjects are hardly at home. Caryas, Oaks, many species of Juglans, *J. Vilmorriana* particularly fine, Cercidiphyllum from Japan, Virgilia lutea, Sophora japonica, and Acer carpinifolium are all represented. The Keaki, that most valuable Japanese timber, is represented by a good specimen, as are also Idesia polycarpa and Phellodendron amurense, the bark forming serviceable cork.

The main stocks in the commercial part of the establishment consists of avenue trees and fruit trees. The avenues in the newer parts of Berlin are very fine, and rival those of the cities of the eastern United States, an avenue of Silver Lime, leading to Charlottenburg, numbering close upon 400 symmetrical and vigorous.

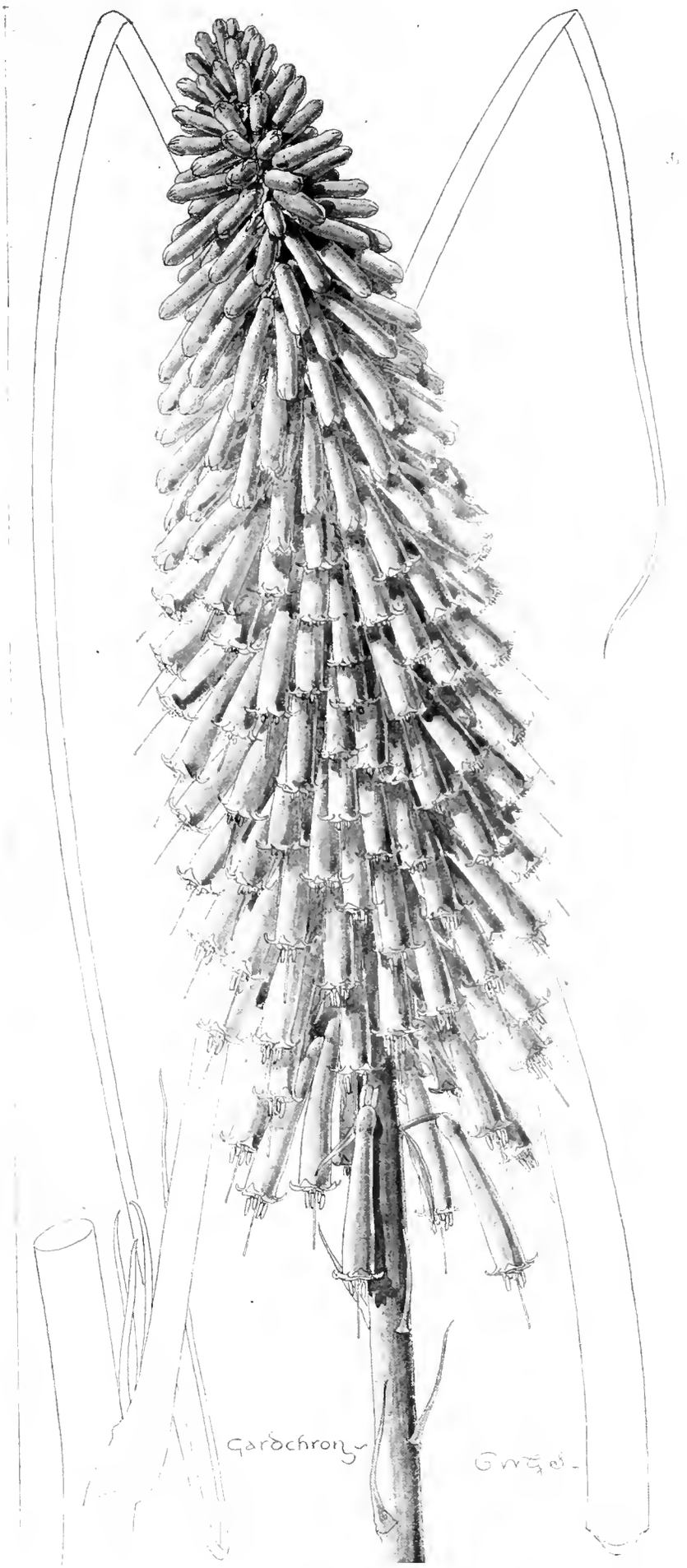


FIG. 19.—KNIPHOFIA (TRITOMA) × GOLDELSE; COLOUR OF FLOWERS CANARY-YELLOW.

trees. These make an impressive sight. The favourite avenue tree in the Eastern United States is Acer dasycarpum, but beyond comparison is avenue after avenue of Salisburia adiantifolia (Ginkgo), the tree selected for that noble artery which leads to the capital at Washington. Herr Späth says Koelreuteria paniculata is being tried in Vienna, and that he has, in order to show the Berliners the possibilities of the tree, planted an avenue of Pterocarya caucasica, which is in excellent condition. *J. H. W.*

KNIPHOFIA (TRITOMA) × GOLDELSE.

NOTEWORTHY on account of its graceful habit, equalled only by that of T. Nelsoni at its very best, this pretty hybrid between T. pauciflora and T. citrina should prove an acceptable garden plant indeed. The leaves are grassy and less than a yard long; the flowers, in slender racemes, are coloured canary-yellow throughout, and are borne in quantity from June till frosts occur in early winter. The plant originated in the nurseries of Messrs. Wallace & Co., of Colchester, and has proved its hardiness by withstanding the winters of 1904 and 1905 without suffering harm. Several other hybrid Tritomas, each with T. pauciflora as one parent, were raised at the same time, but none of the crosses yielded flowers so good as those of T. "Goldelse." Those interested in Tritomas, or Kniphofias, as they are more properly called, may be referred to a series of articles in *Gardeners' Chronicle*, pp. 81, 100, 117, of vol. xxxix (1906), in which most of the species and varieties possessing garden value are described at some length. *C. B. M.*

NEW OR NOTEWORTHY PLANTS.

SENECIO (EUSENECIO) FABERI.

Eighteen years ago I published (*Journ. Linn. Soc.*, Vol. xxiii., p. 452) a description of a Senecio under the above name, drawn up from a small dried specimen, collected by Faber on Mount Omi, Szechuen, Western China. Messrs. James Veitch & Sons recently sent to Kew a very fine fresh specimen of the same species, raised from seed collected by Mr. E. H. Wilson in the same locality. I am thereby enabled to complete my description, though there is not much to add except in the matter of dimensions. The genus Senecio is so numerous in species, and there are so many in cultivation, that it is difficult and somewhat hazardous to adjudge the claims a new species has to a place in a garden of moderate dimensions. S. Faberi is a robust, fleshy, and, perhaps, some would say, a coarse herb, that would form a conspicuous object in a wet part of the wild garden. The inflorescence reminds one of the Central American S. Warscewiczii, and the foliage is similar to that of the sow-thistle, but much larger. Under cultivation, it forms clumps 4 to 5 feet high, and is glabrous or glabrescent in all parts. Stems many angled, hollow. Leaves pinnatifid and coarsely toothed, with a large terminal lobe and usually two pairs of lateral lobes, the rest of the blade being reduced to a narrow wing running down the very thick stalk and expanding at the base into two large auricles, half clasping the stem. Radical leaves as much as 2 feet long; terminal lobe rotund-deltoid, 6 to 8 inches long and broad; lateral lobes 1 to 4 inches long; lower stem leaves nearly as large, but gradually smaller upwards; terminal lobe acutely triangular, 9 inches by 7 inches, coarsely toothed and obscurely lobed. The inflorescence is a dense, compound, flat-topped corymb, 6 to 8 inches across; flower heads very numerous, small, composed of three to five ray, and eight to twelve disc florets, all of a deep yellow. *W. Botting Hemsley.*

JASMINUM PRIMULINUM: ITS HISTORY AND CULTURE.

DURING the past spring one of the showiest and most attractive plants in flower in the Temperate House, Kew, was a batch of well-grown plants of this new Jasmine. Mr. Raffill, the foreman in charge, obligingly informed me that they had been growing in a sheltered recess outdoors for the past three years. In January last, finding they were a mass of flower-buds, they were carefully lifted and planted in one of the beds in the Himalayan wing of the Temperate House. The experiment proved a great success, the plants being one mass of bright yellow flowers, each flower being as large as a four-shilling piece. Some of the flowers were nearly single, others quite double, but in the great majority the corolla was duplicated after the manner of the so-called "hose-in-hose" primroses. These different forms are to be found on one and the same bush, and the same obtains even in the wild plants. In the Kew plants the persistent character of the foliage is very pronounced, and it was evident that the plant appreciated the treatment it received.

Jasminum primulinum is one of Messrs Jas. Veitch and Sons' recent introduction from China It is a native of the plateaux of Yunnan, at altitudes between 4,000-5,000 feet, the tropic of Cancer being practically its line of distribution Around the town of Mengtsze this Jasmine is fairly common in hedgerows, and as scrub by the wayside. On the low, rocky, treeless hills bordering Lake Shi-ping it is abundant. It was first discovered by W. Hancock, Esq., in the neighbourhood of Mengtsze, and was named by Mr. Hemsley, of Kew, and figured in *Hooker's Icon. Plant.*, tab. 2,384. Dr. Henry subsequently collected specimens in the same locality, and also at Szemao, in the extreme south-west of the province. In November, 1899, the writer, when returning from a visit to Dr. Henry at Szemao, succeeded in introducing living plants from Mengtsze to Hongkong, and these subsequently arrived safely in England.

Shrubs and trees which fail to produce seeds freely are expensive and difficult plants to introduce from a long distance. To this class this new Jasmine belongs, and the following details of its introduction may, perhaps, be of interest:—

A few weeks previous to my visit to Mengtsze the Customs Station had been attacked at night by an armed band of rioters, who set the place on fire. The Commissioner's house amongst others was reduced to ashes, and he and his wife narrowly escaped with their lives. They lost everything save the night clothes they had on, and several of their servants were burnt to death. The Commissioner's garden, which surrounded the house, suffered very considerably in the riot, but some fine bushes of Jasminum primulinum growing therein escaped. From these bushes the Commissioner's wife very kindly gave me four well-rooted layers. These layers were healthy, but rather soft, and it seemed advisable to obtain some older plants. The soil of the Yunnan plateaux is mainly clayey-sandstone of a brick-red colour, and, whilst adhering fast enough to one's clothes and boots, it will not stick to the roots of plants growing in it. However, four plants were eventually grubbed from the wayside in a more or less satisfactory manner.

The eight Jasmine plants were trimmed and "balled" up in Salvinia and Azolla, quantities of these being secured from a neighbouring pond and dried in the sun before using. Though not ideal packing materials, these two aquatics served the purpose very well. The eight plants were packed in two shallow ventilated boxes to form one mule's load. The boxes were taken by mule-train to Manhao, on the Red River, and from thence by boat to Laokai, on the China-Tongking frontier. At Laokai they were put on a tiny river steamer and, after four separate transhippings and much difficulty with the French Customs officials, arrived in Hongkong. The whole journey of some 900 miles occupied exactly three weeks, but the plants had not suffered in the least. By kind permission of Mr. Charles Ford, then superintendent of the Hongkong Botanical Gardens, the plants were taken to that establishment, potted up and allowed to get established, the opportunity being taken to propagate some young plants at the same time. I left them in the hands of the Botanical Gardens officials, who most obligingly offered to look after them and to forward a consignment to England when properly established. In the early summer of the following year (1900) a case of these plants was shipped home, but only one plant in the whole case showed any signs of life on arrival. Three or four cuttings were obtained from this plant ere it succumbed, but, by skilful manipulation, quite a good stock was raised from this small beginning. Later in the same year a second case was forwarded, and this arrived in a satisfactory condition.

Messrs. Jas. Veitch and Sons distributed the plant in the spring of 1903, and it is now to be found growing in many parts of this country and on the Continent. In the Riviera, I am informed, the plant thrives well. A friend recently returned from a visit from Cornwall, reports having seen some fine examples growing against sunny walls. But, so far, the plant has scarcely proved a success in this country generally, owing to its inability to withstand our winters with impunity, and, possibly, to the fact of its culture being not yet properly understood However, the magnificent pot plants exhibited by Leopold de Rothschild, Esq., of Gunnersbury, at a meeting of the R.H.S. in January last, is a hopeful sign. The sensation caused by the exhibition of these plants will, of a surety, stimulate other growers.

As a guide to the requirements of this new Jasmine, perhaps a few remarks anent the climate of its habitat may be of service. Yunnan, the most south-western province of China, lays partly within the tropics, and consists mainly of a series of plateaux having a mean elevation of 4,000-6,000 feet. The summer is one of torrential rains; the autumn is changeable; the winter and spring of bright sunshine and dry, fine weather. On the plateaux seldom more than a degree of frost is ever registered. Now a plant found inhabiting a region where the thermometer seldom falls below freezing point can scarcely be expected to prove quite hardy in this country. Nevertheless J. primulinum will withstand considerable frosts, as plants on a north wall at Coombe Wood, and those mentioned at the beginning of this note attest. Doubtless there are a few favoured localities in this country where it will succeed in the open, but the plant is best described as half-hardy. That the plant benefits from a considerable fall of temperature in winter is evident from the behaviour of those growing in the Hongkong Botanical Gardens, where, owing to a continual warm and moist climate, the plant grows and flowers sparsely practically the whole year round, but never makes any decided show. From my knowledge of the plant and its habitat, I should say that, if treated as pot-plants, plunged outside in a sunny position from late May until the end of September, well watered and fed, but not given over much root room, and in October placed in a frost-proof greenhouse, kept on the dry side in a well-ventilated position, where they can enjoy all the light possible, success will follow. Under such treatment the plants should be in full flower in February or early in March. Keeping them on the dry side in winter is important, but if this is over-done the plants will lose all their leaves before flowering.

J. primulinum was first figured from living material in the *Gardeners' Chronicle*, 1903, xxxiii., p. 197, shortly after it received a F.C.C. from the R.H.S. It was subsequently figured in *Flora and Sylva*, the *Bot. Mag.*, tab. 7,981, and various other horticultural and botanical journals.

Both in the *Bot. Mag.* and in *Flora and Sylva* Dr. Henry expressed the opinion that J. primulinum is nothing but a form of J. nudiflorum, which was long ago introduced into Yunnan, and, under a warm climate, has become evergreen and glorified, and now occurs as an escape from cultivation. The facts of his never having met with it in the forests, of its not producing seed, and of its tendency to produce "double" flowers, are adduced as evidence in in support of this theory. Whilst admitting that there is something to be said in its favour, I fear it is more plausible than accurate, and, for my own part, I do not agree with it. Without entering into the debatable question as to what constitutes a distinct species, I consider Jasminum primulinum a good species, and, without doubt, a native of the Yunnan plateaux. As to its not being found in the forests, J. primulinum is a sun-loving plant, and, like many other shrubs and herbs, would never occur in the depths of the forest. The non-production of seeds and the tendency to produce double flowers are more serious objections, but even these are not insuperable, since parallel cases are to be found in the same and other families. During the fifty odd years J. nudiflorum has been in cultivation in this country and on the Continent it has remained remarkably constant, exhibiting no variation whatsoever beyond mere variegation. This fact alone somewhat discounts the possibility of J. nudiflorum having given rise to such a widely different plant as J. primulinum. *E. H. Wilson.*

THE ALPINE GARDEN.

DIANTHUS ALPINUS.

THIS beautiful small Alpine Pink is easily cultivated in this country, and forms one of the most charming species in the rock garden. When in good condition and well established, it makes a lovely carpet of green foliage, and from this rise numerous bright pink flowers 1 inch in diameter on stems of about 3 inches in height. If planted about 6 inches apart in sandy soil and in a sunny position, and given frequent waterings during dry weather, it will need no other treatment

VERONICA ANOMALA

Is not so extensively grown as it deserves to be. It is usually recommended for sunny aspects, but it does not object to the shade, and would form a delightful plant for shady corners in the shrubbery, which is now occupied by some non-flowering shrub. I have seen it growing in quite shady positions to a height of 5 or 6 feet, and producing a mass of white flowers in July. Its elegant form and neat habit should commend it everywhere. *W. F. Glover, Langport, Somerset.*

LÆLIA MAJALIS ALBA.

IN Messrs. Sanders' group of Orchids at the recent Holland House Flower Show, was a specimen of the rare albino form of Lælia majalis. The remarkable purity of the segments, combined with elegance of form and a bold size, entitle it to rank among the most handsome of Orchids.

As far back as our issue for November 6, 1880, p 588, Reichenbach described the white form of Lælia majalis which was gathered by Mr. Petrasch, one of the numerous Roezlian nephews. The illustration at fig. 20 is from a sketch made by Mr. Worthington Smith at the Holland Park Show.

THE PROPAGATOR.

PROPAGATION IN THE MONTH OF JULY.

Ericas.—For the most part the propagation of these plants is carried out by means of cuttings inserted in March on mild bottom heat or in the present month, and in August in the cold greenhouse; and the species E. persoluta, E. tubiflora, and some others easily grown, may be rooted at other seasons. Cutting pots for Ericas should be large 60's or 48's, or pans of 2 to 3 inches in depth, and 4 to 5 inches in width, may be employed according to the number of cuttings to be inserted. At the bottom of the pots or pans, besides the hollow crock over the hole, there must be placed broken sandstone of Hazel-nut size to the depth of ½ inch, over this a layer of moss, and above it a mixture of clean silver sand 1 part, hard peat 2 parts, and over all a layer of clean, sharp sand, or pure sand may be used wherewith to fill the cutting pots, the cuttings being potted in this case directly they are rooted. Suitable cuttings are furnished by shoots taken quite close to the old wood, which have begun to take on a brown tint at the base; or, if side shoots are not available in sufficient numbers, the points of the side shoots may be taken. Cuttings should measure ½ to 1 inch in length. The softer kinds of Ericas produce roots from all portions of the cutting which are beneath the sand, and it is therefore unnecessary to leave any of the old wood on the base. It is only with such species as E. cerinthoides, E. Banksii, E. tricolor, &c., that a heel of old wood is essential, these making a callus before rooting. The leaves of all Erica cuttings must be cut off level with the surface of the sand layer, cutting them from below in an upward direction, and close to the rind. The bell glasses with which they are covered must be wiped every day in the morning or evening, and as the cuttings require to be kept rather moist the bell glasses should be sprinkled every day; the hairy species less frequently.

Some of the Andromedas, as A. hypnoides, A. tetrigona, and A. ericoides, may be similarly treated, and the North American species may be rooted from cuttings of the young shoots taken at this season.

Euphorbia pulcherrima.—The Poinsettia may be increased by cuttings of the young shoots when these are mature, without any drying off being necessary, using peat 2 parts, and sand 1 part, covering them with a bell glass. A bottom heat of 75° Fahr. should be employed.

Kennedyas may be rooted at this season, choosing as cuttings shoots that emerge from the stem of the plant. They require a moderate degree of moisture in the soil, no bottom heat and an atmospheric temperature of 50° to 55°

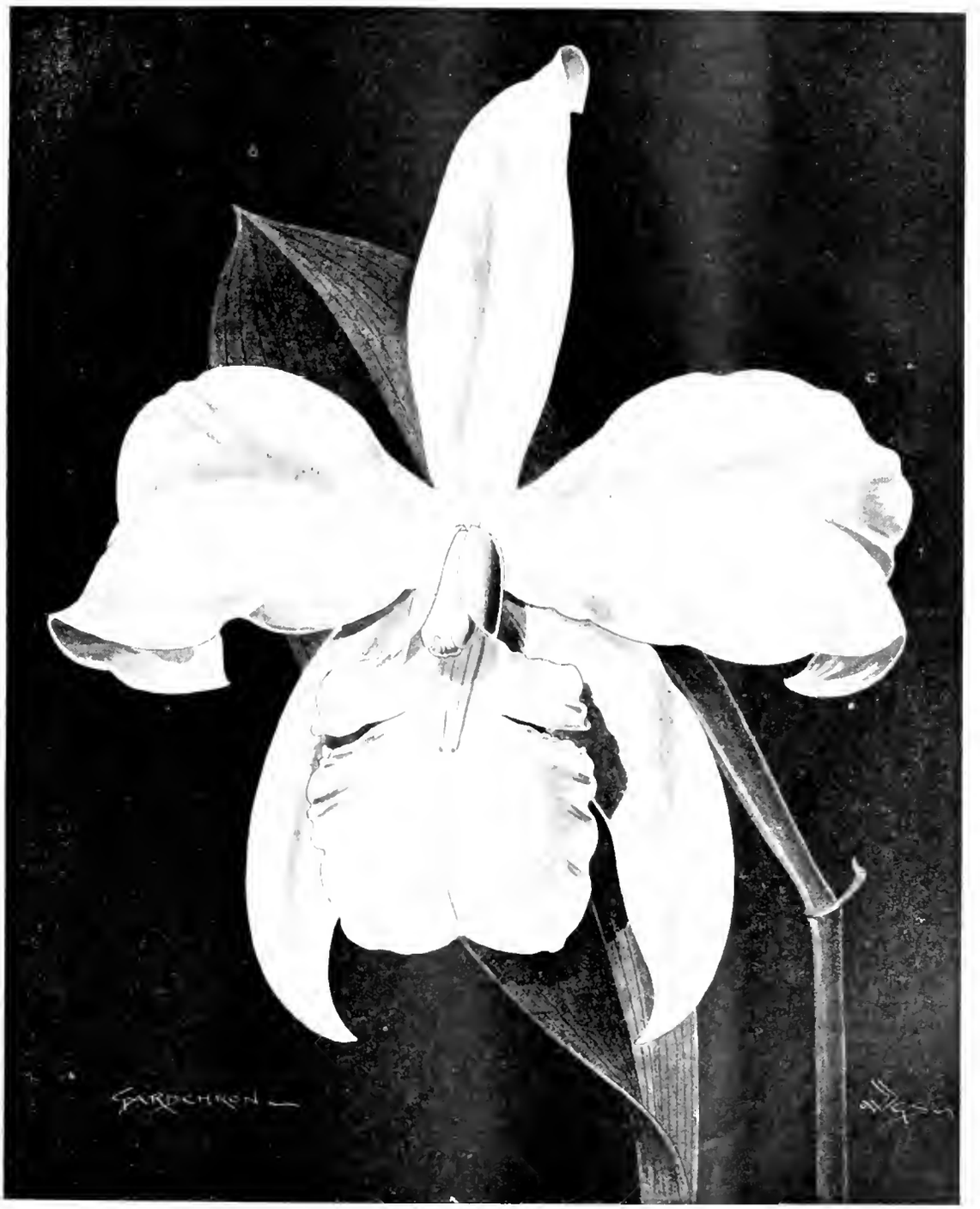


FIG. 20.—LÆLIA MAJALIS ALBA; FLOWERS PURE WHITE.

Pittosporums augustifolium, coriaceum, Tobira, undulatum, and others.—Choose perfectly mature shoots which have the end buds developed, and cut these square across at a joint. Put them into a mixture of peat and silver sand, the latter being about two-thirds of the whole. Apply water in moderation, and afford an atmospheric temperature of 45° to 50°, but no bottom heat.

Propagation by Means of Brood or Suckers.—Many species of trees, shrubs, and climbers can be increased by this means, and where suckers fail to develop, they can be made so to do by art. For example, the soil around an old specimen may be dug up with a fork, working some mild sort of manure into it in the operation, and this will be a means of inducing young growth to be developed from the roots, which at the proper time can be dug up and transplanted, and in the event of an insufficient supply of roots being secured with a sucker, it can be treated as a cutting, and put into a somewhat shady place till roots are formed. Even unhealthy specimens can be made to develop brood by chopping down the stem in the summer, and hacking the roots about midsummer with a spade driven deep into the soil, when numerous suckers will appear in the following spring. In that year, and still more the next year, the crop of suckers will be a plentiful one. Plants raised by this method make more suckers than the mother plants, and in the case of trees, these assume a shrubby character. I may here mention a few species that may be increased by suckers, viz., Ailanthus, Broussanetia, Castanea, Catalpa, Corylus, Deutzia, Eleagnus (especially argentea), Gymnocladus, Hippophae, Lycium, Mahonia, Menispermum, Myrica, Populus, Rhus, Ribes, Robinia, when on their own roots, Ruscus, Smilax, Sophora, Syringa, Tecoma, Weigela, Wistaria, and many of the Spiraeas.

Hyacinths.—Several bulbous species of plants as Lilies, Hyacinths, &c., are increased from broad, artificially produced. In the case of the Hyacinth, the bulbs which it is desired to propagate a few days after they are lifted out of the soil in July, are split with a knife across the crown in as many places as there are new bulbs wished for. A cut right across, ¼ inch deep, will afford from six to ten brood bulbs; and a cross cut 15 to 20 bulbs. The bulbs so manipulated should be laid out close together on plates, on a layer of sand, the crown uppermost, and in October these split bulbs must be planted. The following July they are lifted with all their broods of little bulbs, and placed on a layer of sand and spread out, the base of the bulbs upwards. In October the brood is separated and planted singly in nursery beds, and in the space of four years bulbs fit for forcing are obtained by this method. *F. M.*

PROPAGATION BY LAYERING.

To many gardeners the art of layering is only understood as applying to the propagation of Carnations, and possibly one or two other plants, but there are numbers of hardy trees and shrubs that can be better increased by this means than by any other. Layering affords a means whereby many trees and shrubs, and especially some of the rarer evergreen shrubs, can be propagated safely and readily without injuring the plant in any way, as the growth made by a plant after the whole or a part of it has been layered is nearly always stronger and healthier than would have been the case if cuttings, buds, or grafts had been taken from it. Plants raised from layering are on their own roots, and though it may be possible to raise them from cuttings, yet at the end of four or five years layers will be found to have made better and bigger plants than those raised from cuttings. This refers more particularly to evergreens, trees and shrubs, deciduous flowering shrubs such as Spiraeas, Deutzias, Ribes, etc., being raised so readily from cuttings that it is unnecessary to waste time in layering them. A few of the genera that are readily increased from layers are Andromeda, Aucuba, Berberis, Calluna, Calophaca, Calycanthus, Ceanothus, Chimonanthus, Clethra, Cornus, Dabeocia, Daphne, Erica, Exochorda, Garrya, Halesia, Hamamelis, Hedysarum, Hippophae, Ilex, Ledum, Leucothoe, Magnolia, Myrica, Phillyrea, Pteris, Rhododendron, Styrax, Syringa, Tilia, Vaccinium, Wistaria, and Zenobia. Plants of all the above genera will make roots readily when layered, especially the Ericaceous genera, which are especially easy to increase by this means. Camellias have failed to root when layered, though I have tried them in various ways and on different soils.

The method employed in layering hardy ligneous plants varies somewhat from that used for Carnations, etc. Tongueing is not necessary for anything except Exochorda, which is a difficult plant to layer, and which takes a considerable time to make roots. To prepare a plant for layering the shoots should be cleared of all leaves and small side-branches to within 6 inches or so of the top. The ground should be thoroughly dug around the plant, and all large stones, bits of stick, or roots be thrown out, so as to make the soil fine and easily worked. For layering, an old, flat-bladed trowel is necessary, with which a nick 4 inches to 6 inches deep should be made in the soil, and the shoot bent down and pressed into it, covering afterwards with soil, which should be made as firm as possible with the hands. The point of the shoot should be bent upwards as straight as possible, and made to stand out of the ground as far as the leaves have been left.

Layering can be done at almost any time of the year when the ground is workable, but it is not advisable to do it when growth is young and tender, as then the shoots are very liable to snap off when bent. It occasionally happens that a thick branch partially breaks near its base when it is bent, but if it is not entirely broken off it will be found to stand well enough to keep the layers alive. I have never observed the matter closely, but I have an opinion that layers form roots sooner when the branch is partly broken through. Layers are ready for taking off in from eighteen months to two years after they are put down, and should be cut off from the parent plant early in autumn, but not be taken up until the following spring, when they will be found to be well rooted and able to take care of themselves after being planted out. *J. C.*

THE HARDY FLOWER GARDEN.

Construction of Rock Gardens.

The old-time rockery, which was mainly reminiscent of a rubbish heap ornamented with broken crockery and a few stones stood, sentinel-like, on end, is fast becoming a relic of the past; but not all the modern representatives are very great improvements either from the point of view of the cultivator or the artist. One still has to endure structures of masonry which might be able to resist the guns of a besieging army, but scarcely to give foothold to any but the most vigorous of weedy growths, and withal are ugly and unnatural past adequate description. To ensure success from all points of view, it is absolutely essential that the constructor be experienced in the culture and requirements of the plants it is proposed to make a home for, and also that there be an innate love for, and an appropriate appreciation of, the way in which nature herself "houses" the vast number of Alpines in their native homes. Men to whom work of this kind is entrusted must have a natural aptitude or gift, with the knowledge which is only gained by experience.

The Planning and Planting of Borders.

The best material is almost worthless if badly managed, while second-rate matter may be resplendent when planned in an intelligent manner. When dealing with plants so varied and rich in colour, it becomes necessary to use great care in grouping, so that there is perfect harmony or pleasing contrast at all seasons. The juxtaposition of colours which do not "tone in" may spoil the effect of an entire scheme, and mar the enjoyment of the owner for the whole year. The mixed herbaceous border may be an endless source of pleasure and interest from January to December. There is practically no limit to the variety of plants which may be accommodated and the artistic effects which may be obtained. By a wise selection of plants, suitably arranged with due regard to colour, form, and time of flowering, a single border may furnish more pleasure and beauty than any equal space of ground treated in any other manner. Something has been heard of "monthly flower borders," and it is certain that more will be heard of them. This arrangement, whereby plants flowering at the same time are suitably grouped together, permits effects such as it is impossible to achieve with borders which must do duty over longer periods. Masses of rich colours in full beauty, blended with tender shades and graceful foliage, make a picture at once inspiring and satisfying. The "May border," remarkable for the soft shades which largely predominate, is charming in its fine grouping and broken surface. Bulbous plants are a feature here, and harmonise with Primroses and Forget-me-nots.

The "June border" partakes of a more stately character. Groups of Eremuri wave spikes of wand-like flowers over a wealth of dwarfer subjects. July and August each clothe broad undulating slopes with masses of colour.

The Making of Aquatic and Bog Gardens.

This is a comparatively new feature in landscape gardening, and one which unfortunately lends itself to abuse more readily perhaps than any other. Nothing can excuse or palliate a piece of water which is misplaced. No matter how the surroundings are "faked," it is an everlasting source of worry and irritation to well-balanced minds able to appreciate the eternal fitness of things. Just as nothing exists in nature without a reason, so there should be nothing in any part of the garden landscape which is not an essential feature of it. Obviously the best remedy in this case is prevention. Of the many ways in which beauty and charm are given to a landscape, it is certain that there is nothing so effective as water in various forms, whether as a placid river meandering through rich meadows edged with luxuriant reeds and Fleur-de-lis, or as a roaring mountain torrent, dashing 'tween steep rocky cliffs in innumerable cascades, reflecting light in showers of sparkling spray, and finally becoming subdued in a transparent pool bearing on its bosom the graceful leaves and bright flowers of Nymphaeas and other aquatic plants; or held in hollows between rugged hills, reflecting mountain pasture and leafy branches of noble trees. In any and every form there exists a charm bright and sparkling or contemplative and profound. A natural adjunct to a lake or stream is what may be termed a "bog" garden, for want of a better descriptive term, and this is a feature which is practically an assured success, if only the essen-

tial details be given a little consideration. Be the weather what it may, the rest of the garden scorched by hot suns, there is always this cool oasis where everything is fresh and green and revelling in sheer luxuriance. As a general rule, everything which likes abundant moisture will grow in some part of the bog garden, but if carelessly or ignorantly planted it may be nothing more than a mass of weeds. It is the knowledge which places each plant in its proper place that turns a potential morass into a luxuriant and smiling garden. Besides the showy perennials, which are the main features from a landscape standpoint, some of the prettiest and most interesting plants in existence find a congenial home amongst sub-aquatics. *E. Herton, Neston Cheshire.*

ARTHROPODIUM CIRRATUM.

THIS pretty New Zealand plant is now finely in bloom with me in the open garden. Seedlings were planted three years ago, and this is their first flowering. The leaves, about 1½ to 2 inches across, are gracefully recurved, and the large flower-panicles, holding from thirty to over a hundred blossoms, overtop the foliage by about a foot. The star-like flowers, which are pure white, have anthers partially orange-coloured, this tint contrasting well with the white of the blooms. It was introduced from New Zealand in 1821, but seems to be little grown. I find that snails and slugs are very partial to the foliage, and, unless carefully guarded against, ruin the appearance of the plants.

GLADIOLUS TRISTIS.

I NOTICE that on page 370 Mr. Arthur Grove writes of Gladiolus tristis, mentioning that he had sent a few blooms to the Editor. I should be interested to know what form of this Gladiolus he possesses. The one known under the name of G. t. concolor or sulphureus is by far the best, but, as far as I know, is not stocked by nurserymen. I have recommended many friends to procure this Gladiolus, but of the half-dozen who have taken my advice, all have been supplied with corms bearing flowers marked with a broad purple-black, central band on the three upper segments. The variety or type (?) concolor is destitute of these markings, the flowers being of a uniform pale sulphur colour, and is a much superior plant. An illustration of G. tristis concolor from my garden appeared on page 187, vol. xxxviii. of this paper. As Mr. Grove remarks, this Gladiolus increases rapidly from off-sets. It may be also rapidly propagated from seed which is freely produced. Last year I visited Mr. Archer-Hind's garden, where I found that this Gladiolus had seeded abundantly. Up to that time I had invariably cut the flower spikes as soon as the blooms had faded, but this year I left them with the result of obtaining some 200 seeds. One of the greatest merits of this Gladiolus is its early blooming, for in South Devon it flowers towards the end of April, far in advance of The Bride and others of the same so-called early section. Its delicious perfume after twilight is also much appreciated. *S. W. Fitzherbert, Devonshire.*

COLONIAL NOTE.

THE ERYTHROXYLONS OF GRENADA, W.I.

ON this island we have, so far, only found three species of the genus, namely, E. squamatum, E. oxycarpum, and E. ovatum.

The first-named species is found in certain mountain districts, where it develops into a small tree. The local name, and whether it flowers more than once a year, are facts at present unknown to me. The other two members I am better acquainted with, having had each under observation for several years past.

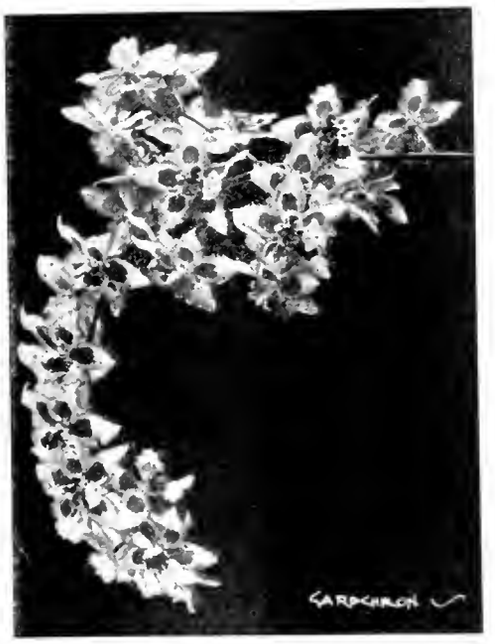


FIG. 21.—× ODONTIODA VUYLSTEKEI.

They grow in hedges, on banks, in pastures, and woods of low elevation, even down to the sea level. They are quite characteristic of the seaboard flora.

E. ovatum suddenly bursts into a mass of pure white flowers some weeks before the wet season sets in, say, in the month of March. At that time the leaves are unfolded, so that the plant is in full flower before they are developed. In about a month hence, bright red clusters of fruit take the place of the blossoms accompanied with fully formed leaves.

The bark is whitish. The upper side of the leaf is a pale green, including the mid-rib: underneath a milky shade. The general appearance of the whole shrub is lighter and whiter than that of E. oxycarpum.

The leaf of E. oxycarpum is stiffer, and the top side of the mid-rib is pale yellow. The bark is darker shaded. The period of flowering is later in the year. During the months of May and June flowers may be detached, but these blossom among the fully grown leaves and are yellow coloured. It grows into a big shrub, or small tree. Both species furnish tough, strong walking sticks, and each here is known as Red Flambeau. They may be seen growing intermixed, and by the novice are not easily distinguished. *W. E. Broadway, Grenada, June 23, 1906.*

× ODONTIODA VUYLSTEKEE.

OUR readers will remember the extraordinary Orchid shown under the above name at the Temple flower show two years ago, by M. Vuylsteke, of Ghent. The name is significant of the parentage, it being a bi-generic hybrid raised from Cochlioda Noezliana × Odontoglossum Pescatorei. Through the kindness of M. Vuylsteke we are enabled to present an illustration of the flowering spike as it appeared recently, from which it will be seen that the plant has lost nothing of vigour from the mixed marriage. The spike shown by M. Vuylsteke at the Temple show bore six flowers, each about 2½ inches across, one of which is represented in fig. 21. The flower was regarded by the Orchid Committee of the Royal Horticultural Society of such merit as to warrant the conferring a First Class Certificate without having the growing-plant before them, a rule which is rarely relaxed. The colour of the markings on the segments is peculiar, and is best described, perhaps, as "salmon cherry"; the toothed crest of the lip is yellow.

KEW NOTES.

ROSES AT KEW.

AT Kew may be seen all the various types of Roses growing in as natural a manner as possible. Such bold masses of one variety as are seen there can only be obtained in large parks and public parks.

In the Rose dell near the Pagoda and in beds and borders in other parts of the gardens the plants are allowed to grow pretty much at will.

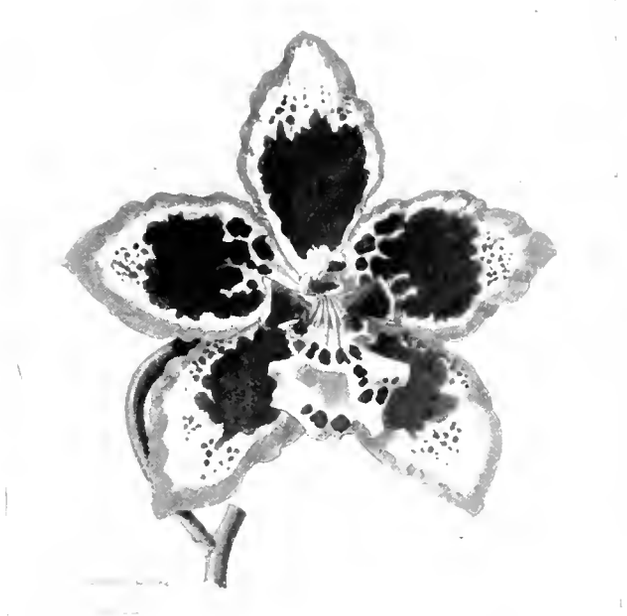


FIG. 22.—ODONTIODA VUYLSTEKEE, SINGLE FLOWER.

Little attention in the way of pruning is given beyond cutting out some of the old wood if the shoots become too numerous. The beds of the varieties Una, Electra, Morletti, Lord Penzance's Sweet Briars, and the varieties of Rosa rugosa are worthy of special mention.

Near the large Palm house many of the beds of hybrid Perpetuals, hybrid Teas, and Teas are at present gorgeous masses of colour. By growing only one variety in a bed the best effect is obtained. Without making these notes appear somewhat like a catalogue, it is difficult to know which varieties to mention. Leading place must be given to a bed of Caroline Testout, a mass of rosy-pink flowers, closely followed by the pearly-white Frau Karl Druschki; Mildred Grant is carrying huge blush-white flowers tinged with pink; very little foliage is visible looking on to the top of a bed of Captain Hayward, so closely is it packed with crimson-carmine flowers. Other varieties worthy of note are Killarney, Augustine Guinoisseau, Mrs. W. J. Grant, Madame Abel Chatenay, and Mrs. John Laing. Amongst the Teas Anna Olivier is one of the best. Princess de Sagan is worth growing for its colour alone (a rich velvety crimson), even were it not such a tree-flowering Rose. The deep rose-coloured Corallina is one of the newer varieties that has undoubtedly come to stay. Marie van Houtte, G. Nabonnand, and the old favourite Homère are also very good.

A beautiful effect is produced by pegging down the shoots of such vigorous-growing varieties as Cheo, a flesh-coloured H.P.; Frau Karl Druschki, and Gloire de Dijon. Words can hardly express the beauty of large beds grown in this way, presenting an almost flat surface of flowers. If grown and pruned in the ordinary way, the plants would have to be planted very thickly to obtain such a mass of flowers—even then I very much doubt if the effect would be so good; plenty of the shoots are carrying two to three dozen flowers on them.

Many of the climbing varieties on the Pergola, running parallel with the rockery, are covered with flowers. Practically all the sections suitable for the position are represented by one or more varieties. Dundee Rambler, Splendens, and Ruga represent the Ayrshire section. The Evergreen varieties Félicité et Perpétue and Flora are free growers, blooming in large clusters. The Multiflora hybrids are very popular pillar Roses. Aglaia, the Yellow Rambler, Crimson Rambler, Euphrosyne, the Pink Rambler, Helene, a mass of pale rose-coloured flowers with creamy white centres, and Tea Rambler, sweetly perfumed, coppery-pink flowers, are the best. The Boursault variety Amadis is covered with large, semi-double, purplish-crimson flowers.

The varieties named represent only a few of the best at present in flower. The Pergola was completed in its present form some five years ago. It is about 200 yards long, 13 feet wide, and 9 feet 6 inches high. The uprights are 17 feet apart, and are connected over the path by iron bars, and along the sides with chains. *D. D., July 14.*

The Week's Work.

FRUITS UNDER GLASS.

By T. W. Bunkshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Colouring of Grapes.—This is one of the most important points to consider in the cultivation of Grapes. Some varieties are much longer in producing a perfect "finish" than others. For instance, Madresfield Court, Muscat Hambro, Muscat of Alexandria, and Gros Colmar. These four varieties need considerable time and unremitting attention as to the affording of water and ventilation. The weather exercises very great influence in the colouring of the berries, and in some cases artificial means have to be employed in order to advance the process and produce that rich amber colour which is so much admired in the Muscat of Alexandria, Buckland Sweetwater, Golden Hambro, and Cannon Hall Muscat. Fresh air has also an important part in the process, and from the time the berries begin to change colour a fair circulation of air should be given, providing the external conditions are suitable. On dull, damp days it is necessary to have a little heat in the water pipes, and at the same time to admit a little air to the house. It will often be found that the best coloured bunches are those which are growing nearest to where the ventilators open. Nevertheless, cold draughts should always be prevented as much as possible, as they are exceedingly injurious. Where fruit is now ripening much mischief may result in hot weather if sufficient attention is not given to the matter of ventilation. The exact nature of the soil also exercises an important influence in regard to colour. For instance, on a heavy, strong loam, excellent bunches as regards size may be had, but Muscats will not develop in such conditions so good a colour as when grown on warmer soils. All artificial manures have good or bad effect on Grapes, and if used immoderately are sure to be injurious. It is always the safest plan to apply two small doses rather than one large one.

Muscat Grapes.—Where the fruit is changing colour, it may be necessary in some localities to apply a light shade over the glass, such as would be afforded by a garden net. It will serve to break the sun's rays, but more light may be allowed to pass through the bunches than would be good for black Grapes. Remove lateral growths at intervals of two or three days, so that no check may be given to the vines. Let water be afforded to the borders according to the stage of development the Grapes have attained.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

The Carnation.—No garden is complete without this favourite flower for border decoration, and plants should also be grown in the reserve ground for supplying flowers for the furnishing of vases. Unfortunately, the Carnation does not succeed well in all soils, though in a deep loam inclined to be heavy and well manured with cow dung, they will continue for a few years in good condition and bloom freely. It is, however, even then preferable to renew the plants yearly, and in less favourable soils it becomes a necessity to do so. The best means of doing this is by "layering," and the present is an appropriate time for carrying out the work. To do this, the soil round the old plants should be removed to the depth of a few inches, and mixed with leaf mould and sand. The most suitable growths should be selected, and the leaves removed from the stem up to the top three or four joints. With a sharp knife make a cut through the shoot just below a joint which it is intended to make the base of the new plant, making a slanting cut upwards through the joint, bringing the knife out just above it. By means of a peg press the stem of the manipulated shoot into the new compost, taking care that the slit part of the joint is separated and pressed outwards from the stem. When all the shoots on one plant have been treated in this manner, cover in with the newly-prepared soil, and finally water carefully with a fine-rosed watering pot, to ensure the soil settling around the layers. After all the plants are layered, care must be taken that the soil is watered in dry weather, to encourage the rooting process. In about a month or six weeks the layers will have made roots, and in October the plants will require to be lifted, and either planted into their permanent quarters, or potted up and wintered in frames for planting out in spring.

Seedling Carnations are very easily raised, and if a good strain is obtained, the plants will flower much more profusely than the named varieties. For cutting purposes the flowers are invaluable. If treated liberally, the plants will bloom exceedingly well in the first season, but to obtain the best results they should be left undisturbed until the second season. May is undoubtedly the best season to sow the seeds in boxes, but if sown now, and potted up and placed in frames for the winter, they will make splendid plants for putting out next spring, and they will flower in the following autumn.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Wall Cherries.—Trees that have borne a crop of fruits this season must not be allowed to suffer from want of water. The growths should be well syringed with clear water to rid the foliage of any insect pests. A washing with an insecticide, such as Richards' XL All, may be necessary, and this should be used strong enough to rid the trees of red spider, should any have lodged on the leaves. If a second application is necessary, let it be done, for now is the time when the plant is ripening up its wood, and on this depends the next year's crop. Any worthless trees should be rooted up, and the ground prepared at the earliest opportunity for planting young trees. Varieties that succeed best in the particular district in which the garden is situated should be noted, also the time of the fruits ripening, in order to acquire for succession.

Gooseberries.—Early varieties must be closely netted, or blackbirds and thrushes will soon clear much of the fruit. Later fruiting varieties, especially those trained on walls, should be given ample supplies of water at their roots; they are also greatly benefited by an occasional sprinkling overhead.

The Loganberry, Strawberry, Raspberry, &c.—These should receive attention in the matters of watering, staking, and tying, for if these particulars are attended to, the labour will be amply repaid by extra fine fruits. Thin out any leaders that are not required. Mulch heavily after watering.

Pears.—These fruits should, at this time, have received their final thinning. Unfortunately, many good varieties dropped a large proportion of their fruits during the cold the first week in June, but there still remains a good crop on some of the better varieties. Any that are in clusters should be thinned out according to the estimated size of the variety, for small fruits of a large variety are, as a general rule, quite flavourless. Cordon-trained and small trees on the Quince stock will require great quantities of water and liquid stimulants at their roots, especially those on light and well-drained soils; and even trees planted in heavy ground will be much improved by an occasional watering from the sewage tank or farmyard byre. Should the mulching material be getting thin, apply an additional quantity, for this is one of the best and cheapest methods of guarding against the effects of dry weather. Probably the greater part of the heavy rainfall on June 27 was carried away by the drains, and came too hastily to benefit the trees to any great extent.

Strawberries.—These should now be layered in quantity for the making of new plantations. Early-layered plants, intended for forcing, should be severed from the old plants, and be afterwards placed in frames for a day or two, and kept shaded. When they have recovered from their disturbance they should be finally potted in their fruiting pots. Layers are the best when secured from one-year old plants, but as all growers have neither the time nor the space to grow these, they have to depend upon those from two-year-old plants, and these do very well. In order to keep up a good supply of fine fruit, the beds should not remain longer than three years. A new bed should be made every year, and a corresponding one destroyed. Plants of Royal Sovereign that have been forced and afterwards planted out of their pots may reasonably be expected to produce fruits in the autumn. Several other varieties of Strawberries will also bear a second crop in this way in the autumn.

Preparing new Strawberry beds.—The ground should be well dressed with manure and dug over. An ideal quarter is an old Onion bed, and although it is late in the season when the Onions are removed, I have planted much later and with success. An Onion bed is already enriched with manure and well trenched, and young Strawberry plants revel in such conditions.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Asparagus.—The growths are now becoming top heavy, and to avoid any chances of their getting broken or twisted they should be secured by stakes or tied to lengths of string stretched along the rows. Nothing is more preventive of good results than damage to the top growths, as the strength of the next season's crowns will greatly depend upon the foliage. If time can be spared, supplies of liquid manure should be given the plants, especially during dry weather. Keep the beds free from weeds and from seedling Asparagus plants.

Potatos.—The lifting of early crops will now be in progress, and this will afford a suitable opportunity for selecting seed tubers for next season's crop. It is best to select these when the crop is being lifted, as they can then be selected of a proper size. With us the best early varieties are Ringleader, Sharpe's Victor, May Queen, and the newer Sutton's Gladiator, which is an improvement on May Queen. These are all "first earlies," and are first-rate kinds, either growing in the open border, frames or pots. Main crop varieties generally promise well this season. Keep the rows free from weeds, for these do damage by choking the leaves of the Potatos.

Peas required for exhibition, or for special purposes, should have the points of the growths pinched out about five weeks before they are required, and, if possible, immediately above the second truss of flowers. It makes much difference to the length of the pods when the plants are thus treated, and to the size of the individual Peas themselves. Tying the growths to the stakes is also essential in order to prevent the pods from becoming damaged by the wind, which sways them about and rubs the bloom off. Seeds of any special variety should only be saved from the very best pods with a view to getting an improved stock; for selection, if persisted in, undoubtedly makes a great improvement in the Pea crop.

Marrows.—These are now growing strongly, and should have their growths regulated and pegged down. The points of long growths should also be pinched to induce the formation of side shoots. Should green fly attack the plants, syringe them with a solution of quassia and soft soap, and give plenty of water, both overhead and at the roots. Cut the Marrows as soon as they are large enough to be useful rather than exhaust the plants by leaving them until the fruits become ripe and of little value. Small fruits are preferable to large ones.

Endive.—During the autumn, when Lettuce is not plentiful, this vegetable is of great value; periodical sowings should, therefore, now be commenced. The broad-leaved Batavian is certainly the best variety, but if another kind is also required, the fern-leaved variety should be sown. To prevent premature seeding, plant the seedlings in rich well-cultivated soil, and give copious supplies of water during dry weather. Many salads are often spoiled by neglect of these details.

THE ORCHID HOUSES.

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

Bulbophyllums, Cirrhopetalums, and Megacliniums.—Very seldom does what is generally termed a "botanical" Orchid attract so much attention as the remarkable Bulbophyllum virescens did at the recent show at Holland House. It is surprising that the species of Bulbophyllum do not receive more attention from growers. Bulbophyllums and Cirrhopetalums, which are closely allied, constitute a numerous group of beautiful and singular flowering plants, many of which deserve a place in every collection of Orchids. I have remarked in a former Calendar that no description can give an adequate idea of the quaint distinctiveness of many of these, or of their varied charms, which in a representative collection are present in more or less degree throughout the year. Such species as the remarkable B. Ericssoni, B. grandiflorum, B. longisepalum, B. tremulum (the hairy lip of which closely resembles a hand brush), the delicate mechanism of the lip of B. barbigerum, and the oscillating labellums of B. Dearei, B. Reinwardtii, B. Lobbii, and its variety siamense, &c., always attract attention; while the striking umbrella-like spread of the sepals of Cirrhopetalum Mastersianum, C. ornatissimum, C. Cumingii, C. O'Brienianum, C. Roxburghii, C. Amesianum, &c.; also the distinct C. Collettii, C. picturatum, C. Thouarsii, the strange-looking C. Medusæ with long sepals, which has the appearance of dishevelled hair (see illustration at Fig. 6 in *Gardeners' Chronicle* for January 9, 1897), and many others, are exceedingly pretty and interesting. The compact growing C. nutans, smothered with umbels of small white flowers, makes a charming object. A small collection of these botanical Orchids would occupy but little space, especially as the majority thrive well in shallow pans that may be suspended close to the roof. Those with long creeping rhizomes should be planted in shallow teak-wood baskets of sufficient size. These receptacles should be filled to about three-fourths of their depth with clean crocks or firm pieces of well-dried fern rhizomes, putting a thin layer of rough sphagnum-moss over these, upon which the plants should be placed, carefully spreading out the roots over the surface of the moss, and filling up to the rhizome of the plant with peat and moss in equal parts, mixing a moderate quantity of small crocks with the compost. The plants should be re-potted when new growth commences, which usually occurs soon after flowering. All of them will thrive well in a warm, shady part of the Cattleya house, but a similar position in the East Indian house or the ordinary plant stove will also suit them. There are, however, some varieties which come from high altitudes, and should any of them show signs of ill-health remove them at once to a cooler and more freely ventilated atmosphere. These plants enjoy an abundant supply of water during the growing season, and for this reason should be examined two or three times each week. While at rest, even in summer, they need but little water, yet they should be sprayed over occasionally to prevent shrivelling of the pseudo-bulbs, or the plants will be permanently injured. The plants are not often attacked by insect pests, but an occasional sponging of the leaves becomes necessary in order to maintain them of a healthy clean colour. Another curious and interesting section of botanical Orchids are the Megaclinium, which are closely allied to Bulbophyllum and Cirrhopetalum, but are distinguished chiefly by the flowers being borne on each side of a flattened rhachis. As in Bulbophyllum, the labellums are often so constructed that with very slight motion they are thrown backward and forward as though they were set upon a delicate hinge. Megacliniums require similar culture to that given to Bulbophyllums, &c. A few of the best varieties are M. triste, M. Clarkei, M. bufo, M. falcatum, M. purpuratum, &c. The section once known as "Sarcopodium" are now all included under Bulbophyllum.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

The Colouring of Codiæums (Crotons).—These claim a leading position among plants cultivated for the beauty of their foliage, and must be given the careful treatment all first-rate plants need, otherwise Crotons in culture will prove a failure. The essential details to be observed in the colouring of these plants are light, heat, moisture, cleanliness, and good feeding. Light, with as much sunshine as the plants will bear without suffering injury, is essential, for, failing this, it is impossible to obtain rich colouring in the foliage. The plants should be kept close to the glass, and if a little air has been admitted to the structure from an early period in the season, it may now be increased with advantage, and direct sunshine allowed without fear of the leaves scalding. The house should be closed early in the afternoon, allowing the atmospheric temperature to rise to 95 or 100°; these high temperatures apparently develop the rapid colouration in the leaves. A moist atmosphere must be maintained, and during the season of growth it is hardly possible to have it too moist. A good practice is to damp the structures and plants about 8 to 9 p.m. On no account should the plants become dry at the roots, as loss of foliage would be certain to follow. Above all, see that the foliage is clean, for if mealy bug is present the conditions of the atmosphere will be suited to its rapid increase; therefore spraying with insecticide should be followed up. Feeding is important to develop the foliage to its greatest limits, and Codiæums need a large supply; but no animal manure is employed at Cleveley in the growing of Crotons. Standen's manure is the principal fertiliser used. There is yet time to improve the colour in any plants which may be indifferent, if the above directions are followed out.

Pot Roses.—Examine plants which are intended for forcing during the coming winter. If the soil and drainage are in good condition, repotting will not be needed, but a top dressing may now be applied, and this should consist of good fibrous loam and a sprinkling of bone meal and coarse sand. Should the loam be very heavy, add one-sixth part of good leafmould. Encourage the plants to make healthy growth, affording them frequent applications of clear manure water. Remove any flower buds which may appear at this time, and endeavour to build up a good constitution in the plants as the season for maturing the wood advances.

Gardenias.—Keep those plants in cooler conditions which are intended for flowering early or autumn and in winter. The plants may be exposed to full sunshine and ventilation, so that the growth may be thoroughly matured; this must be done gradually, otherwise the plants may suffer a check. For the production of early flowers thoroughly ripened wood is necessary, and then with an increase of temperature the plants will soon form and swell their flower buds. Clay's fertiliser is an excellent manure for these plants. Insert cuttings of young shoots for raising a stock of plants for next season.

THE APIARY.

By CELERIS.

Foul Brood.—This is a disease commencing with a very minute germ called a spore, which comes in contact with a larva, or may be consumed by it. The spore has wonderful vitality, and once it finds suitable conditions, it germinates and develops into a bacillus. Having exhausted its feeding ground, spores are produced to again continue the disease, given suitable conditions. It should be noted that the disease attacks brood, and, without brood, cannot make headway. When a larva has been attacked, it dies, and dries into a brown scale, which lies on the lower side of the cell. Should honey be stored in the cell, or an egg be laid in it, the result is equally disastrous. The honey may be fed to other larvæ, and thus spread the disease, or the larva will hatch to die.

What it looks like.—Generally speaking, the beginner would notice a difference in the odour arising from the hive when the quilts were raised. The dead larvæ turn coffee-coloured, become a stringy mass, and, when in an advanced stage, smell like bad glue. The cappings over the diseased brood cells are broken and sunken. If a piece of stick be thrust into an infected cell, the sticky matter will adhere to it and stretch out an inch or more, then break and return like elastic to the cell.

Remedy.—Should the disease be in an advanced stage, it will be well to destroy the quilts, hives, and bees, and make a fresh start. In the early stages the bees should be shaken from the frame into an empty skep, there to remain covered in confinement for 24 hours. Thoroughly cleanse the hive by washing with carbolic, boil all the fittings, or, as these latter are cheap, it would be better to destroy them by fire. Fit up the frames with starters, cage the queen, in three or four days remove the starters, melt into wax, and fit up with full sheets of foundation, keeping the queen caged for five or six days more. If the old combs are returned, they should be melted into wax by boiling, otherwise the wax will become a source of infection. The hive would stand on the old site. When the disease is discovered, act promptly but with discretion. Close all the entrances of the hives, so that one bee only may pass at a time, in order to prevent robbing; for this would only help to spread the disease. Generally speaking, it is useless to deal with a weak colony; they are not worth the trouble, nor is it likely to be successful, nor can the scourge be coped with during the early spring. Now is the time to eradicate it when the honey flow is in full swing.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	July 21	German Gardener Soc. meets.
TUESDAY,	July 24	Nat. Carnation & Picotee Soc. Sh. in Roy. Hort. Hall, Westminster.
WEDNESDAY,	July 25	Cardiff & County Hort. Soc. Exh. (2 days). Newcastle-upon-Tyne Fl. Sh. (3 days). Dingwall Fl. Sh. Ewell Cottage Gardeners' Sh.
THURSDAY,	July 26	Ulster Hort. Sh. (2 days). Bridgwater Fl. Sh. Scarborough Fl. Sh. (2 days).
FRIDAY,	July 27	Roy. Bot. Soc. meets.
SATURDAY,	July 28	Dutch Gard. Soc. meets.

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

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, July 18* (6 P.M.): Max. 80°, Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, July 19* (10 A.M.): Bar., 30·0, Temp., 61°, *Weather*—Showery.

PROVINCES. *Wednesday, July 18* (6 P.M.): Max. 80° London, Min. 55° Liverpool.

SALES.

FRIDAY—

An Importation of Cattleya Trianæ, also other Imported and Established Orchids; Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

SATURDAY—

A well-arranged Horticultural Property, Mount Pleasant Nursery, Vicarage Lane, Hailsham, Sussex, at Caldredge Hotel, Eastbourne, by Protheroe & Morris, at 4.

The "Botanical Magazine."

Very few, if any, publications can boast of so long and unbroken continuity as the *Botanical Magazine*. It first made its appearance in 1787, and the July number for the present year, containing the plate No. 8080, has just been issued. Throughout its whole career the main object of successive editors has been to produce accurate illustrations and authentic descriptions. Without in any way pandering to the caprices and fashions of the day, it nevertheless reflects impartially the state of garden-botany during the hundred and nineteen years of its existence. In the early volumes hardy European and North American plants furnished the material for the majority of the representations. Afterwards the Cape of Good Hope supplied Heaths, Pelargoniums, Mesembryanthemums, and various succulent and bulbous plants, some of which are no longer to be found in our collections. The first Fuchsia (F. Magellanica) was figured in the third volume, t.ab. 97. The first Orchid (Calopogon pulchellus) was shown on plate 116. The Chrysanthemum, though previously cultivated by Philip Miller, was not generally known or appreciated till it was figured in the magazine (tab. 327), (1795). In 1801, on the death of William Curtis, Dr. John Sims, an eminent physician of the day, undertook the editorship, and continued to control its destinies till 1826, with much help from Bellenden-Ker (formerly Gawler), R. A. Salisbury, and Dean Herbert, Sydenham Edwards being the artist. The magazine went through various vicissitudes till, on plate 2,689, we first meet with the name of William Jackson Hooker. From 1827 onwards Dr. Hooker, afterwards Sir William, conducted the magazine with a degree of success, whether as regards artistic fidelity or technical accuracy, which has never been surpassed. Hooker's labours were so multifarious that even his powers of work were not adequate to the task of continuing to delineate the plants he described, and in consequence, as early as 1834, he availed himself of the services of Walter Fitch, who continued to enrich the magazine with his drawings down to the year 1877. Subsequent illustrations have been supplied by Lady Thiselton-Dyer and Mrs. Barnard. The present artist is Miss Smith, who was educated for the purpose by Sir Joseph Hooker, and whose faithful representations are much appreciated. In 1865 Sir William Hooker died, and was succeeded, both in the Directorate of Kew and the editorship of the *Botanical Magazine*, by his son, who inherited his father's powers of work, zeal, and talents as a botanist. He joined to them the experience of a traveller and explorer in many lands. It is no wonder, then, that the reputation of the magazine was not only maintained, but enhanced, under his direction. Sir Joseph continued to act as editor till 1904, since which time the periodical has been conducted by Sir William Thiselton-Dyer, who has lately retired from the Directorship of Kew. During three successive directorates, therefore, the *Botanical Magazine* has been in a sense, though not officially, connected with Kew. Since 1845 the magazine has been published, with exemplary punctuality, by the well-known firm of Lovell, Reeve and Co.

We have alluded thus cursorily to this honoured publication for the purpose of drawing the attention of our readers to the recent publication of "a new and complete index to the *Botanical Magazine* from its commencement down to the end of the third series in 1904." This index has been prepared by Mr. W. Botting Hemsley, F.R.S., the curator of the Herbarium. Working botanists and horticulturists cannot be too grateful to Mr. Hemsley for its preparation, though they will assuredly regret the omission in every case of the name of the author responsible for the name of the plants figured. As the omission can be readily supplied by reference to the work itself, this is, after all, a matter of minor consequence. But Mr. Hemsley has done more: he has prefixed some historical details relating to the general history of systematic botany in its relation to horticulture, including references to other publications, which, for the gardener-botanist, are of entrancing interest. The basis of this portion of the volume consisted in a series of articles contributed to the *Gardeners' Chronicle* in 1887 by Mr. Hemsley, and now reprinted with many additions and some modifications. With this index, reaching back to the latter part of the eighteenth century, and extending to our own times, and with the superb "Hortus Veitchii" to which we have recently alluded, the student has at his disposal invaluable material for reference, and the historian of garden-botany a boundless store of information conveniently arranged for his purposes.

HORTICULTURAL SHOW AT DRESDEN.—Invitations to take part in the 3rd International Horticultural Exhibition that is to be held at Dresden, in May, 1907, have now been issued. The exhibition is so planned as to be representative of every branch of horticultural art. Orchids, which are meeting with ever increasing favour in Germany, in great measure due to the newly-founded German Orchid Society, are to receive special attention. Other sections of the exhibition are to be devoted to hot-house and cool-greenhouse plants, Palms and early spring flowers. Fruit, vegetables, open-air and aquatic plants are to have places allotted to them, and the theories of horticulture, landscape gardening, garden architecture, the construction of conservatories, and the art of the florist will meet with due consideration. Full particulars and the regulations relating to exhibitors and competitors are to be obtained from the Exhibition Office, Hotel Stadt Rom, Neumarkt 10, Dresden—A.

MR. GOODACRE.—"A visitor to New York last week was J. H. GOODACRE, a well-known English horticulturist and writer on fruit culture in the English horticultural papers. He has been spending four weeks "seeing America." On landing, he went through Canada to the Pacific Coast, travelled through California and came East, arriving in New York from Washington last Wednesday morning. In Washington, he was entertained by W. R. SMITH. He visited the Rose-growing establishments of New Jersey, and sailed from New York on the "Campania" on Saturday last. MR. GOODACRE is much impressed with the large scale on which things are carried out in the florists' business in this country, and he feels that it is a great mistake for English gardeners to come to the United States when they have once become started on their career on the other side."—*Florists' Exchange*.

PORTRAITS OF BOTANISTS.—Mr. DÖRFLER, of Vienna, announces that he is about to publish at intervals a series of portraits of botanists, accompanied by a short biographical sketch. The size of the portraits is 5 × 3 inches. Each part is to contain 10 portraits, and 100 portraits with title page and index will form a volume.

MR. JAMES DAWES, of Ledbury Park Gardens, Herefordshire, has resigned his position as head gardener for Lord BIDDULPH, a post he has filled for upwards of twenty years past, in order to take an appointment as fruit-expert and instructor under the New Zealand Government. Mr. DAWES had for several years past served as a councillor of the Ledbury Urban District Council. The council called a special town's meeting for the purpose of making some suitable form of recognition of his services. A committee was then appointed, and this committee called a meeting on Monday, July 9, at the Barratt Browning Institute, when the chairman, Mr. STEPHENS, C.C., made the presentation. We understand the purse contained upwards of fifty guineas. Mr. DAWES was well known as a most successful grower and exhibitor of all kinds of fruit at the largest exhibitions in the United Kingdom, having gained the "HOGG" Memorial Medal last October at the

FIG. 23.—CARDUUS KEENERI; FLOWERS PURPLE.

(For text see page 52.)

R.H.S. autumn fruit show. His services as judge were in great demand, for amongst other ordinary engagements he acted as judge for several years of the annual winter pruning competitions of the Worcestershire County Council. Mr. DAWES practically re-made the entire gardens at Ledbury Park; he also took the keenest interest in the technical instruction schemes of both the Hereford and Worcester County Councils.

THE WINTER FLOWERING CARNATION SOCIETY has now published its rules as adopted on May 29, from which we make the following extracts:—1. The society shall have for its object the extension of the culture and the improvement of winter flowering Carnations. (a) By holding exhibitions annually. (b) By awarding certificates to meritorious and truly "winter flowering" varieties, such certificates to be awarded by practical and experienced growers only. (c) By the collection and dissemination of information likely to prove of interest and profit to the members, and by encouraging the extended growing of these flowers. 2. The membership to be confined to trade growers and amateurs. The minimum yearly subscription to be 5s. Subscriptions become due on election, and afterwards on January 1st in each year. Copies of the rules may be obtained on application to the society's secretary, Mr. HAYWARD MATHIAS, Dean Cottage, Thames Ditton, Surrey.

FERTILISERS AND FEEDING STUFFS BILL.—The object of this Bill is to carry into effect the recommendation of the Departmental Committee appointed in 1903 by the President of the Board of Agriculture and Fisheries to inquire into the working of the Fertilisers and Feeding Stuffs Act, 1893. The Bill proposes to repeal the Act of 1893, and re-enact it with the alterations suggested by the committee. Among the provisions of the Act are the following:—"Every person who sells for use as a fertiliser of the soil any article which has been subjected to any artificial process in the United Kingdom, or which has been imported from abroad, shall give to the purchaser an invoice stating the name of the article and what are the respective percentages (if any) of nitrogen, soluble phosphates (that is to say, the actual percentage of tribasic phosphate of lime which has been dissolved or rendered soluble), insoluble phosphates, and potash contained in the article, and the invoice shall have effect as a warranty by the seller that the actual percentages do not differ from those stated in the invoice beyond the prescribed limits of error. Where any article sold for use as food for cattle or poultry is sold under a name or description implying that it is prepared from any particular substance or from any two or more particular substances, or is the product of any particular seed, or of any two or more particular seeds, and without indication that it is mixed or compounded with any other substance or seed, there shall be implied a warranty by the seller that it is pure—that is to say, is prepared from that substance or those substances only, or is the product of that seed or of those seeds only. . . . On the sale of any article for use as food for cattle or poultry, there shall be implied a warranty by the seller that the article is suitable to be used as such. . . . Any statement by the seller of the percentages of the chemical and other ingredients contained in any article sold for use as a fertiliser or the value of the nutritive and other constituents contained in any article sold for use as food for cattle or poultry, made after the commencement of this Act in an invoice of such article, or in any circular or advertisement relating to such article, shall have effect as a warranty by the seller."

LABELLING IN THE REGENT'S PARK.—A correspondent writes appreciatively of the fact that the names on the labels attached to the plants are written in a horizontal direction, so that it is not requisite to twist one's neck to read them. He also suggests that some competent person should be employed to supervise the nomenclature, and especially the spelling of the plant names. He gives a large number of illustrations in confirmation of his statement, but it is not necessary to repeat them. Few can know better than ourselves how difficult it is to avoid errors, especially when, as in our case, the work has usually to be done under pressure.

RESULTS OF GRAFTING UPON APPLES.—At a meeting in April last, of the *Société Nationale d'horticulture de France*, M. GUSTAVE RIVIERE gave the results obtained by grafting the Apple Calville blanc on the Paradise stock and upon the Doucin. It may be remembered that previous similar experiments have been made with Pears grafted on free stock and on the Quince. As regards the influence of the stock upon the scion in the case of the Apple, M. RIVIERE deduces the following conclusions:—1, The average weight of Apples gathered on Calville blanc grafted on Paradise is superior to that of Apples of the same variety grafted on Doucin; 2, The proportion of free acid (expressed in sulphuric acid S O 4 H 2), is larger in the juice of Apples gathered on the variety under consideration grafted upon the Paradise than in the juice of fruit of the same variety grafted on Doucin; 3, The proportion of ash is greater in the juice of fruits gathered from trees grafted on Doucin than in the juice of fruits gathered from trees grafted on Paradise; 4, Lastly, that the proportions of reducing sugar and of saccharose are perceptibly larger in fruits of Calville blanc grafted upon Paradise than in those of the same variety gathered from trees grafted on Doucin. These new experiences confirm those previously made, and further show, not only that dessert Apples contain more sugar per litre of juice than do Pears, but that they also contain more saccharose and more free acid.

BOLETIM DA SOCIEDADE BROTERIANA.—The last issued number of the *Transactions* of this Portuguese Botanical Society comprises a number of articles concerning the flora of that country. Some of the articles are in Portuguese, others are in French, especially one by M. J. DAVEAU on the botanical geography of Portugal, which is full of detail interesting to those who study the distribution of plants and their relation to past and present conditions.

DENDROLOGICAL SOCIETY OF FRANCE.—This society was founded in November, 1905, for the association of all interested in trees, in their botany and acclimatisation, both practical and theoretical. As regards theory the society will encourage its study by publishing in its *Bulletin* original monographs and reports of the works of non-members. It will further strive to adopt a uniform nomenclature, conformable to the rules laid down by botanists. In the practical section the wider cultivation of rare and the introduction of new species will be encouraged. The *Bulletin* will publish such facts as can be got together with regard to the use of exotic species, so as to ensure the trial and careful and rational utilisation of these for ornamental purposes or for economic plantations. For this end the cultivation of little known trees will be undertaken and the products distributed among the members. Exchanges between the members will also be encouraged. Finally, information will be at the service of the adherents of the society on questions concerning identification, cultivation, and so on. M. R. HICKEL, Professor of the National School of Agriculture le Grignon, 11 bis, Rue Champ la Garde, Versailles, is nominated secretary of the Dendrological Society; M. DODE, 4, Place du Maine, Paris, is the treasurer.

METEOROLOGY.—The council of the Royal Meteorological Society, with the view of advancing the general knowledge of Meteorology, promoting an intelligent public interest in the science, and making the work of the society more widely known, last year appointed a lecturer to act in co-operation with scientific societies, institutions, and public schools in various parts of the country. The success attending the project was so marked as to lead the council to continue the appointment for another year. An opportunity is thus presented of stimulating and directing in a scientific channel the popular interest always shown in the weather, and of obtaining authoritative information on matters regarding which the public are not always well informed. The lecturer, Mr. WILLIAM MARRIOTT, F.R.Met.Soc., is prepared to deliver lectures on the following Meteorological subjects:—1, "A Chat about the Weather"; 2, "Weather Forecasting"; 3, "Rain, Snow, Hail and Thunderstorms"; 4, "The Upper Regions of the Atmosphere"; 5, "Clouds, Fog and Sunshine"; 6, "Climate and Health"; 7, "Meteorology in relation to Agriculture"; 8, "How to observe the Weather" (Elementary). The society possesses a valuable collection of photographs, drawings, diagrams and charts, illustrating meteorological phenomena, and also various patterns of instruments used in meteorological observations. The council are willing to make arrangements for exhibiting selections of these, under the charge of a member of the staff, at gatherings of local scientific societies, or on other occasions when they are likely to prove of interest. Particulars as to the fees for the lectures, and as to the terms on which the exhibits can be lent, may be obtained from the assistant secretary, Royal Meteorological Society, 70, Victoria Street, Westminster, S.W., to whom all communications should be addressed.

GERMAN DENDROLOGY.—The 15th annual meeting of the Deutsche Dendrologische Gesellschaft (German Dendrological Society) is to take place this year at Oldenburg, from August 6 to 10. An attractive programme has been prepared, including visits to the most noteworthy parks and gardens in the vicinity under the guidance of their respective owners and superintendents. The inaugurators of the excursions state that these are to be of a purely scientific nature and are not to be looked upon in the light of ordinary summer picnics. Lectures will be given on various dendrological subjects, including monstrosities, the species of Rhus, the culture of Rhododendrons, and notes on Conifers. A small exhibition will be held in connection with the meeting. Herr THORMAN, 27, Langestrasse, Oldenburg, will be pleased to give further particulars concerning the meeting and all information respecting hotel accommodation.

HERACLEUM MANTEGAZZIANUM is one of the most imposing plants of its class. It is a native of the Caucasus, and in its finely cut, dark metallic green foliage somewhat resembles that of an Acanthus. It is best adapted for growing on turf in a somewhat shady situation. If it is planted out in the spring as a year-old seedling, it develops during the summer into a fine foliage plant of from 2 to 3 feet high. In the following year it reaches a height of over 9 feet, and the circumference is not far short of 8 feet. The large, yellowish-white flowers are arranged in umbels measuring from 12 to 15 inches across. As with all other species of Heracleum, H. Mantegazzianum, after its flowering at the end of August, ripens its fruit and soon dies down, whereupon fresh sowings should be made and the young seedlings again started. The plant in flower is figured in the *Gartner Zeitung*, May 26, from a photograph taken in the nursery of Messrs. STIEGLER BROTHERS, in Cannstatt.

PITCHER-SHAPED LEAVES.—Horn or trumpet-shaped formations on the leaves of Lettuces, Cabbages, and other plants are by no means uncommon. In a recent number of the *Comptes Rendus* (June 25, 1906), M. BLARINGHEM notes the formation of these pitchers after, and apparently in consequence of, some mutilation or injury to the plant. Further than that the observer just named has proved by experiment that the condition is in some cases hereditary. Assuming this to be correct we have an instance of inheritance of an "acquired" character.

SPRAYING POTATOS.—The New York Experiment Station publishes (in *Bulletin* No. 279) some useful directions for spraying Potatos, pointing out the uses and limitations of the operation. The writers, Messrs. STEWART, EUSTACE, and SIRRINE, conclude that "the general tendency of spraying is to reduce the amount of rot. In most cases the reduction is very marked; in some cases there is no difference, and occasionally spraying increases the amount of rot. It depends on weather conditions and the thoroughness of spraying. But whatever the effect on rot-sprayed plants always give a larger yield of marketable tubers. Judging from the experiments thus far made it appears that spraying for blight is an operation which no potato grower in New York can afford to neglect. Thirty-three farmers' business experiments made during the past three years show an average net profit of over 22 dollars per acre due to spraying. Commence spraying with Bordeaux when the plants are 6 to 8 inches high, and repeat at intervals of 10 to 14 days throughout the season, making in all five or six applications. When bugs are troublesome add Paris Green or other poison."

Publications Received.—From the Imperial Department of Agriculture for the West Indies. *Tobago, Hints to Settlers*, by Mr. J. T. Rosseau, Captain Short, and Mr. Smith. Messrs. Walker and Evans, and Savile have supplied the photographs. Cacao, Rubber and Cotton are the chief crops for planters to grow, but there are, of course, many other productions of the island.—*Manurial Experiments with Sugar-Cane in the Leeward Islands*. 1904-5. Ratoons but not plant canes showed gain from the use of artificial manures. The publication was drawn up by Dr. Watts and his colleagues.—*Agricultural Bulletin of the Straits of Federated Malay States*. March. Edited by H. N. Ridley and J. B. Carruthers. The contents deal chiefly with Rubber notes and news.—*Agricultural News, Barbados*. Contents: Canning Pines, and notes on Cassava, Cotton, &c.—*Annual Report on the Botanic Gardens, Singapore and Penang*, by H. N. Ridley. Water-lilies were established and did well, as also did Gladioli, plants seldom seen in Singapore. The work of the herbarium was carried on under difficulties owing to lack of funds. An agricultural show was organised in Penang, and proved very successful.—*Annual Report on the Forestry and Scientific Department, Uganda*. March 31st. by E. Brown. Large additions were made to the herbarium. The garden and nurseries are increasing, and much useful experimental planting was undertaken.

CARDUUS KERNERI.

THIS distinct looking plant is a member of the Thistle genus and comes from Bulgaria. It was distributed in 1905 by Herr Leichtlin, and grows from 2 to 3 feet high, with spiny stems and leaves. The large flower heads are produced singly on long peduncles, and are very attractive when in bud, owing to the rich red-purple colouring of the bracts. The flowers also are rich rosy-purple in colour, and the whole plant reminds one of our native C. cernuus, with its nodding heads of flowers. It is evidently a biennial. For the specimen illustrated we are indebted to Mr. Beamish, of Cork.

OMPHALODES LUCILIÆ.

THIS very pretty herbaceous plant, with glaucous foliage and pale blue flowers, like those of the Borage, is reputed to be difficult to grow. Those who have seen it on Mr. Crisp's rockery at Friar Park, Henley, will feel sceptical as to the difficulty we have mentioned. It has there a deep root range, and is sheltered by an overhanging mass of rock.

FIG. 24.—OMPHALODES LUCILIÆ, AS GROWN ON MR. CRISP'S ROCKERY AT FRIAR PARK.

NURSERY NOTES.

SWEET PEAS AT MESSRS. WATKINS & SIMPSON'S.

ABOUT fifty members and friends of the National Sweet Pea Society visited the seed grounds of these wholesale seed merchants at Twickenham and Feltham on 6th inst. for the purpose of inspecting a trial of about 150 varieties of Sweet Peas. The nurseries were in first-class condition, and bright patches of many flowers were in full beauty, one breadth of the vivid Eschscholtzia Mandarin being noticeable from all quarters of the seed farms. But it was with the Sweet Peas that the company had specially to deal.

The object of the trial was to ascertain the behaviour of each variety when grown under ordinary conditions; also to determine the merits of its colouring compared with others of the same shade, and, as many are known to be duplicated under other names, to identify the varieties. It was at once seen that many varieties are not nearly "fixed," and the tendency to revert is in some so great that the true type was difficult to determine in the row. The rows were apportioned to varieties of colours according to the Society's schedule—twenty-two in all. It was at once apparent that many were quite inferior to those in neighbouring rows. Many old varieties, however, were found to be still worthy a place. Thus Lord Rosebery was considered quite one of the best of the rose shades, while the old Black Knight is equal to any maroon, and Bronze King is still quite distinct, although rather small in flower. Among the pink and rose shades, Gladys Unwin appeared to be one of the best. Countess Spencer, also good of colour, was found to be much mixed. Many of the rose and pink varieties were either synonymous with or inferior to Gladys Unwin. Queen Victoria (yellow and buff) is a strong grower; and of this shade is Lady M. Ormsby Gore, which is a good shade of colour when young. King Edward VII. is one of the best of the scarlet and crimson shades. Queen Alexandra was considered an improvement on Scarlet Gem, being slightly larger and does not burn. Fascination is a good lavender and mauve. Much duplication of names was noted in this section, and some were very mixed, not having been sufficiently "rogued." Lottie Eckford is one of the best of the Picotee section. Among the "blues," Romolo Piazzani attracted attention. The new Admiral Togo (maroon) greatly resembled Othello, an old kind. Prince Edward of York is a good bicolor. Among the orange shades were some grand things. Gorgeous is admirable, and Evelyn Byatt perhaps better still. Bolton's Pink and Miss Willmott are others of merit of this shade. Among the "creams," Gracie Greenwood is first class. Among the striped and flaked, the new Helen Pierce was favourably received.

After the inspection of the Peas the party were conducted over the large nursery grounds of the firm, both at Twickenham and Feltham, and much that was interesting was gleaned as to the methods of raising seeds and stocks by our large wholesale seedsmen.

HOME CORRESPONDENCE.

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

NAME: NAME:—In walking through Regent's Park the other day I was pleased to find a great number of labels with the names written horizontally so that one can read them without having to strain one's neck in so doing. It is rather a pity, however, that some competent person did not supervise the spelling of the names. One would expect to find botanical names spelt correctly in a Royal Park. *N.* [Our correspondent mentions a large number of illustrative examples.]

FROM A SOUTH DEVON GARDEN.—I have just returned home after six weeks' absence and find a few good things out. Androsace lanuginosa, about 4 feet square, has evidently been splendid, but is going off now. The glory of the garden is Salvia dichroa from the Atlas Mountains. It is over 8 feet in height and 6 feet through at the base, and has hundreds of flower spikes. Buddleia Colvillei is still in bloom, and B. variabilis Veitchiana is just coming into full flower. Sparaxis (Dierama) pulcherrima alba is very beautiful, having dozens of tall, slender, arching flower-stems holding drooping white blossom. It is far prettier than the type. I also have Callistemon salignus (sold by nurserymen under the name of Metrosideros floribunda) in flower, Indigofera decora alba, Psoralea pinnata (pretty), Aristæa Ecklonis, Mitraria coccinea, Philesia buxifolia, Arthropodium cirratum, a white Bouvardia, Agapanthus (blue and white), Solanum aviculare (7 feet high, good), and Bowkeria triphylla is in bud. *S. Wyndham Fitzherbert.*

FIG. 25.—OMPHALODES LUCILIÆ: FLOWERS PINK, CHANGING TO BLUE.

EARLY DWARF PEAS.—I desire briefly to pay a tribute to Little Marvel and Harbinger for affording earliest crops. These two varieties were planted on south borders here out of seed boxes on March 5. Although the spring proved anything but favourable, we had an abundant supply of Peas in the first week in June. I consider these two varieties beyond passing merit, inasmuch as they are capable of withstanding drought, and the quality of the Peas remains fit for table for a considerable time after the pods have reached maturity. We favour the method of raising early marrow Peas in boxes and transplanting small well-hardened plants during a spell of open weather. Hitherto I had regarded the taller growing William I. as an indispensable variety, but although a prodigious cropper it matures quickly and soon becomes unfit for table use on our light gravel land. *F. W. Goch, Edge Grove.*

CAMPANULA AMABILIS.—The fault possessed by Campanula amabilis of producing but few flowers, remarked upon by "W. I." in the "Kew Notes" in the *Gardeners' Chronicle* of July 14, has shown itself in other parts of the country. It is also much taller in habit than its foliage would lead one to think, and the flower spikes seem unduly tall in proportion to the plant. The foliage in itself is, however, of much beauty, and as a low-growing plant it is not to be despised, even when not in bloom. *S. Arnott, Sunnymead, Dumfries.*

ROMNEYA COULTERI.—This plant is not generally regarded as one of the easiest of cultivation, but when success is attained the result is specially gratifying. At the time of writing Romneya Coulteri is the most charming subject in this garden. Nearly two hundred flowers are open at once, and of buds there are as many again to open. Some idea may be obtained of the effect and fragrance by anyone acquainted with the Californian Poppy. Little difficulty has been experienced in cultivating the plants. It is always necessary, however, to make a good start and in a suitable site. The position chosen here is under a terrace wall having a south-west aspect. At the foot of the wall a trench 2½ feet was taken out, and a drainage of broken bricks and lime rubble to a depth of 1 foot was returned, on the top of which a very porous compost, consisting of turfy loam and road grit in equal proportions, together with plenty of finely broken brick and lime rubble, well incorporated, was placed. These conditions allow of the application of copious supplies of diluted farmyard soakage during the season of growth, but ensures a dry bottom during the resting period which is most essential. Six plants planted four years ago have each season become stronger, and this season growths 8 feet and 9 feet in length, strong, and healthy-looking, have been made. No protection from frost has been given. *A. Bullock, Coffod Hall Gardens, Essex.*

VEGETABLES FOR HOSPITAL. May I bring to the notice of the readers of the *Gardeners' Chronicle* a means whereby they may confer a great benefit to a deserving institution at no very great cost to themselves. One of the most important items of diet at this hospital is fresh vegetables, and it is one that it is very difficult to keep the hospital satisfactorily supplied with through the ordinary commercial channels. I therefore appeal to owners of gardens to be so good as to send us presents from time to time of fresh vegetables. I shall be happy to defray the cost of carriage in both directions. I might mention that as the largest children's hospital in England, and the medical school recognised by the University of London for the study of children's diseases, we receive patients and students from, and send out doctors and trained nurses to, all parts of England, so that the benefits conferred by the hospital not being confined to the inhabitants of London, I feel I may with some justification appeal to those living in the country for help. In addition I may state that in one year no fewer than 162 children of gardeners were treated at the hospital. *Stewart Johnson, Secretary, the Hospital for Sick Children, Great Ormond Street, London, W.C.*

PLANT PORTRAITS.

LOCUSTA. KATHLEEN MALLARD.—*Revue de l'Horticulture Belge*, July 1.

DENDROBIUM FORMOSUM.—*Revue Horticole*, July 1. Second-class *Gardeners' Chronicle*, June 2, 1906, fig. 138.

SOLANUM CORNIFOLIUM, *Revue Horticole*, July 1.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 17.—Only a week intervened between the holding of the great exhibition at Holland House and the meetings of the Committees at the Hall, Vincent Square, on Tuesday last, and it is not surprising, under such circumstances, that the Hall was only poorly furnished with exhibits.

The awards recommended to novelties included four Awards of Merit by the FLORAL COMMITTEE, one First-Class Certificate and two Awards of Merit by the ORCHID COMMITTEE, and one Award of Merit by the FRUIT AND VEGETABLE COMMITTEE. In the afternoon there were 59 new Fellows elected, and a lecture on "Sweet Peas" was delivered by Mr. Horace J. Wright.

Floral Committee.

Present: H. B. May, Esq., in the Chair, and Messrs. T. W. Turner, G. Reuthe, Chas. Dixon, George Gordon, W. Cuthbertson, Jas. Douglas, E. H. Jenkins, J. T. Bennett-Poe, H. J. Cutbush, Amos Perry, W. Howe, J. F. McLeod, E. T. Cook, C. Blick, R. Hooper Pearson, C. T. Druery, R. W. Wallace, and James Hudson.

An interesting exhibit of insectivorous plants came from the gardens of R. I. MEASURES, Esq., Camberwell, S.E. (gr. Mr. J. Smith), and, considering they were grown so near to the City of London, they showed very good culture. We have seen larger and stronger plants, but these were clean and healthy-looking specimens. Sarracenias, Darlingtonias, Dro-eras, Cephalotus, with a setting of Maranta Massangeana, formed the chief subjects. (Silver Flora Medal.)

Mr. JAMES DOUGLAS, Edenside, Great Bookham, Surrey, had a superb display of cut Carnations in vases. No fewer than 60 varieties were shown, and several new varieties were included (see Awards). Viscountess Ebrington (apricot yellow), Goldfinch (apricot—a glorious colour), Daffodil (yellow), Liberté (yellow ground, fancy, with brown and chocolate bars—a large and shapely flower), Bendigo (heliotrope), and Agnes Sorel (Clove) is a selection of the choicer kinds displayed.

A curious seedling Picotee was shown by Mr. DOUGLAS. The habit is tufted, with remarkably fine foliage of a pronounced glaucous tint. The flower (of a yellow shade) is small and straggling. (Silver Flora Medal for the group.)

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, showed small plants of Ferns in several varieties, and a very large number of Codiæums (Crotons), arranged in a setting of choice Ferns. (Silver-Gilt Banksian Medal.)

Mr. C. W. BREADMORE, Winchester, put up one of the finest displays of Sweet Peas we have seen. The stand contained 145 bunches, in about 70 varieties, including novelties. All the flowers were of large size, and were presented in first-class condition, colour and substance being of a high order of merit. (Gold Medal.)

Mr. WM. DEAL, Brooklands, Kelvedon, Essex, showed many varieties of Sweet Peas representative of most of the popular shades of colours seen in these refined flowers.

Messrs. WM. CUTBUSH & SONS, Highgate, London, N., showed a remarkably pretty stand of Carnations of tree, border, and "Malmaison" types. The flowers were finely developed, and were displayed on tall stiff stems. (Silver Flora Medal.)

Mr. AMOS PERRY, Winchmore Hill and Enfield, Middlesex, staged a large bank of hardy flowers. We noticed several good forms of Chrysanthemum maximum, also a list of other showy flowers. (Silver Banksian Medal.)

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, showed a beautiful group, representative of most of the hardy flowers now in season. Anthemis Kelwayi resembles a clear yellow Marguerite, the flowers being produced in profusion. A good form of Mimulus cupreus named Brilliant attracted attention; the colour is deep orange-red. (Silver Flora Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants, staged a group which was brilliant with showy Campanulas, Spiræas, Delphiniums, Phloxes, Galegas, Helenniums, Pyrethrums, and other garden flowers. The Spiræas were a feature, S. palmata being finely coloured. (Silver Banksian Medal.)

Messrs. A. & G. CLARK, LTD., Dover, Kent, staged an array of border flowers and vases of Sweet Peas. (Silver Flora Medal.)

Messrs. J. CHEAL & SONS, Crawley, Sussex, also showed hardy flowers and Sweet Peas.

Some nice border Carnations were displayed by S. MORRIS, Esq., Wretham Hall, Thetford (gr. Mr. G. Henley). (Silver Banksian Medal.)

Messrs. R. & H. BATH, LTD., Wisbech, showed a mixed collection of flowers. They had some very beautiful Roses, Sweet Peas in great variety, and a number of hardy flowers.

Messrs. WM. PAUL & SONS, Waltham Cross, Herts., displayed baskets of large Roses from the open. Such beautiful varieties as Dr. Wm. Gordon, Countess Cairns (a somewhat loose flower, but of exquisite colour), Earl of Warwick, Celia, and David R. Williamson found a place in the group, which also included an arch decorated with Waltham Rambler.

Mr. HOWARD H. CRANE, 4, Woodview Terrace, Highgate, London, N., showed bunches of the small-flowered type of Pansy named Violettas. These miniature forms were nearly all named varieties raised by Mr. CRANE. They are very fragrant, have a close tufted habit, and exhibit most of the shades of colour familiar in ordinary Violas.

Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, showed seedling Rudbeckias.

Messrs. DOBBIE & Co., Rothesay and Mark's Tey, showed a batch of Godetia Schamini, a beautiful hardy annual, the plants being raised from autumn-sown seed. An individual plant, included to show the habit, was smothered with its semi-double, rosy-pink flowers. The variety was awarded an Award of Merit last season.

MARY Countess of ILCHESTER, Holland House, London, W. (gr. Mr. Dixon), showed sprays of Petræa volubilis, Hibiscus brilliantissimus, and Ipomœa Learii.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, exhibited a number of small plants of Lisianthus Russellianus, each with a showy inflorescence to show its identity with the plant given an Award at the Holland Park Show. An illustration of the plant is given at fig. 26.

Flowers of Romneya Coulteri were displayed by Mr. W. A. Cook, gardener to Sir EDMOND LODER, Leonardslee, Sussex. The individual flowers were very big, and resembled large, white, single Paconies.

Nymphæas of exceptional quality were displayed by Lord HILLINGDON, Hillingdon Court, Uxbridge (gr. Mr. A. Allen). There were large flowers of the beautiful claret-coloured variety William Falconer, Lucida (of lighter tint), carnea (as its name suggests delicate flesh tint), the tiny pygmea alba, the yellow chromatella, and others of equal beauty. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, displayed some little pot plants of the floriferous Nemesia strumosa. The specimens were of very compact growth, and each was covered with a profusion of flowers. The range of colouring in the flowers was very wide, the strain being exceptionally good and much in advance of the older type, some of which were included for comparison. Messrs. CANNELL also showed a plume of the Woad Isatis glauca, with flowers of a rather better shade of yellow than is usually seen in this plant.

AWARDS OF MERIT.

Carnation Cupid.—A clear, rich pink-coloured border variety, of moderate size, excellent form, and non-splitting calyces. The petals are very slightly fimbriated. Shown by Mr. JAMES DOUGLAS.

Carnation Robert Berkley.—A brilliant, rosy-crimson border variety; the flowers are of large size, and rather too crowded in the centre, giving to the variety an appearance suggestive of a Hollyhock. Shown by Mr. JAMES DOUGLAS.

Delphinium "Cinos."—A white or sulphur-coloured variety, with primrose-yellow centre. The flowers are very large and of good form, and they are produced on large, bold, well-furnished spikes. Shown by G. FERGUSON, Esq., The Hollies, Weybridge (gr. Mr. F. W. Smith).

Sweet Pea "Rosy Morn."—A deep reddish-rose or magenta-coloured variety. The flowers are extra large, and the standard erect and spreading, though slightly wavy. The spikes had three flowers on each. Shown by Messrs. H. CANNELL & SONS.

Nemesia "Orange Prince."—This strain has two qualities to recommend it. The first is that of good habit, the plants shown being about 7 inches in height, perfectly erect, branching from the base—from axils below the ground level—and presenting an almost level surface of bloom 9 inches across. The second good quality is in the rich orange shade of the flowers, which showed no variation in the four plants submitted to the committee. The habit, especially, is much to be preferred to some Nemesias. The variety was shown by Mr. W. H. GARDNER, Mill Street, St. Osyth (Award of Merit for strain.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), H. J. Veitch, De B. Crawshay, W. A. Bilney, J. Colman, H. A. Tracy, W. H. White, W. H. Young, H. G. Alexander, W. Boxall, and H. Little.

Messrs. HUGH LOW & Co., Enfield, were awarded a Silver Banksian Medal for a group of Orchids, in which were some good varieties of Cattleya Mossiæ and C. Mendeli, one specimen of the former bearing 17 flowers; also a very large-flowered C. Gaskelliana; another pretty variety of it with uniformly tinted pale lilac rose flowers, and the clear white C. Gaskelliana alba; C. Harrisoniana with 12 flowers, and the pure white C. Harrisoniana alba with two blooms. Others in the group were Ladio-Cattleya Ingrami, Odontoglossum Schleiperianum citrinum, and four plants of Messrs. Low's importation of O. Pescatorei, all with large round flowers of fine quality.

Messrs. STANLEY & Co., Southgate, were awarded a Silver Banksian Medal for a neat group, in which were good Cattleya Mendeli, and a selection of very fine varieties of C. Aclandiæ; a good example of C. Dowiana aurea, two plants of a natural hybrid between C. intermedia and C. guttata, with pretty flowers having whitish sepals and petals spotted with purple, and with dark purple front and tips to the side lobes of the lip, &c.

Major G. L. HOLFORD, C.I.E., C.V.O., Weston-birt, Tetbury (gr. Mr. H. G. Alexander), showed a collection of cut flowers of very fine Sobralias, one stand having five immense purplish rose blooms of Sobralia Holfordii, the labellums of which were 4½ inches across and which secured a First Class Certificate at Holland House. Four fine blooms of the handsome Sobralia Sanderiana, with white sepals and petals tinged with rose and yellow, the large labellums being reddish claret colour in front and with a rich yellow tube. Sobralia macrantha Kienastiana, which received a First Class Certificate, June 9, 1891, was represented by a stand of five pure white blooms, Sobralia Amesiana, with large yellowish flowers tinged with rose, and another variety were also shown.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed Cypripedium Mrs. Rehder Glebelands variety (Argus × Rothschildiana), &c.

C. G. NEWKIRCHNER, Uplands Road, Hornsey, sent a plant of the dwarf Oncidium pumilum with an erect inflorescence of small yellow flowers.

R. J. MEASURES, Esq., Cambridge Lodge, Camberwell, sent Cypripedium Wottonii callosum

FIG. 26.—EUSTOMA (LISIANTHUS) RUSSELLIANUM: FLOWERS VIOLET PURPLE WITH ORANGE-COLOURED ANTHERS.

× bellatulum), with well-formed rose-tinted flower bearing some purple spots on the petals; Selenipedium nitidissimum, and another Selenipedium of the S. longifolium section.

Messrs. Duchesne, Lanthorne & Co., Watermael, Brussels, showed a handsome Odontoglossum which they had bought as O. caliginosum (crispum × Pescatorei), but which was identified as a form of O. Vuylstekei. The finely formed flowers were white: the sepals and petals heavily blotched with rose and the rounded fimbriate lip having the front occupied by one large brownish blotch around which was a narrow white margin.

AWARDS.

First Class Certificate.

Aerides Houlletianum Fowler's variety, from J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). One of the finest of Aerides, large-flowered, fragrant and of attractive colouring. The heavy raceme bore many fine flowers, the sepals and petals of a pale buff-yellow tint tipped with rose; the broad labellum, white at the base, the fimbriated front of a clear rose-purple. The plant was excellently well-grown and the flowers finely developed.

Award of Merit.

Lycaste tricolor albens, from J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge). A singularly variable little species from Guatemala, the flowers varying from greenish with rose-tinged petals to nearly white as in the variety shown, which had very pale-green sepals and petals and lip.

Cattleya Mrs. Myra Peeters (Gaskelliana alba × Warneri alba), from M. A. A. Peeters, St. Gilles, Brussels. One of the very finest pure white Cattleyas. The Award was made at the Holland House show, but a flower for painting not being then available the Award was held in abeyance. The flower had now been received.

Cultural Commendation.

To Mr. G. G. Whitelegge (gr. to J. Bradshaw, Esq., The Grange, Southgate), for two plants of Lycaste tricolor, the one with 16 and the other with 24 flowers.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (chairman), and Messrs. Jos. Cheal, S. Mortimer, Alex. Dean, A. R. Allan, J. Davis, H. J. Wright, F. Q. Lane, P. D. Tucker, J. Jacques, J. Mc. Indoe, and E. Beckett.

Such a display of vegetables was shown by Mr. Ed. Beckett (gr. to Lord Aldenham, Aldenham House, Elstree,) as is seldom equalled. Not only was the quality of the produce of sterling merit, but the manner of staging showed how vegetables should be displayed. As a background were pyramids of Cauliflowers in a setting of Parsley, and beneath were clumps of Lettuce and Cabbage, with Marrows between them; in front of these were Carrots, Turnips, Beans, Potatos, followed by Beans, Peas, Tomatos, Cucumbers, Mushrooms, &c. Of Peas there were Duke of Albany, Centenary, Peerless Marrowfat, Early Giant, and Ideal; Potatos Sharpe's Victor, Ninety-fold, Ideal, Windsor Castle, Gladiator, Herd Laddie (blue), &c., all with skins of spotless exterior, and as though polished; the Cabbages included Flower of Spring, Mimcrop, and Favourite, each perfectly formed, with solid centres; Cucumbers, straight and long of the kinds Matchless, Peerless, and Delicacy; Yellow Perfection and White Gem Turnips; Intermediate Carrots; Globe Beet; Ne Plus Ultra Beans, and a host of other good things that we have not space to enumerate. (Gold Medal.)

Another meritorious display was a very large exhibit of fruit shown by Lord Hillingdon, Hillingdon Court, Uxbridge (gr. Mr. A. Allan). Here again was seen produce of excellent quality, but the dishes were spread along a table like slates on a school desk, whereas they could have been grouped with a few ornamental plants and have made a really first-class exhibit. Great variety was seen, including Peaches—Violette Hative was in first-class style; Nectarines Pitmaston Orange, Dryden; Pine Apple; Strawberries British Queen, Waterloo (good box), Trafalgar, Gunton Park; Figs Brown Turkey, Bourjassotte grise and Negro Largo; Cherries Emperor Francis, Governor Wood, Bigarreau Napoleon, &c.; also Gooseberries, Currants, Raspberries, &c. (Hogg Memorial Medal.)

A box of Condor Peaches shown by the Earl of Darnley, Cobham Hall, Kent (gr. Mr. T. R. Cuckney), was awarded a Cultural Commendation.

Mr. W. A. Cook (gr. to Sir Edmund Loder, Leonardslee, Sussex), showed fruiting sprays of Norwich Wonder and Semper Fidelis Raspberries.

Mr. W. Deal, Kelvedon, Essex, exhibited pods and fruiting haulms of popular sorts of culinary Peas.

Other exhibits included a seedling Melon, varieties of Cucumbers, and a new Rose Potato.

Award of Merit.

Culinary Pea "Quite Content."—This Pea, pods of which were shown by Messrs. J. Carter & Co., was mentioned in a previous number as being grown at Wisley. The pods are extremely large, and some of them contain as many as eleven first-class Peas. The variety is described as the best mid-season Pea up to date, but even so, gardeners are not apt to remain "quite content" for long, and they will be likely still to look for further improvement in Peas.

THE AFTERNOON MEETING.

At the afternoon meeting there were fifty-nine new Fellows elected, and Mr. Horace J. Wright delivered a lecture on Sweet Peas, Mr. C. H. Curtis presiding. Mr. Wright commenced by stating that the Sweet Pea could never have been a common flower, and related what a very long Latin name it originally bore. He mentioned its introduction from Sicily to this country to Dr. Uvedale, the raiser of Uvedale's St. Germain Pear, towards the end of the 17th century; also the slow development that occurred until the late Mr. Henry Eckford set to work about 30 years ago, the results of which are familiar to our readers. Six or seven years ago, Mr. Silas Cole, gardener to Lord Spencer, showed the variety Countess Spencer, a variety with a wavy standard of much beauty. From this variety very many others have arisen with similar characteristics, and, although all of these are at present very variable, Mr. Wright said he believed that this type would be favoured in the future beyond the giant type with erect standard such as was raised by Mr. Eckford. Reference was made to the National Sweet Pea Society, and Mr. Wright said that the society should have some regard at least for varieties that are specially suitable for garden decoration, and not, as at present, devote its entire attention and interest to the exhibition qualities in the flowers. It might not generally be known that if Sweet Peas are cut part way down after flowering they are capable of producing another display. This they will do, if plenty of water and manure water is afforded them. After a few remarks by Mr. Curtis, Mr. Alex. Dean said he hoped that efforts would not be made to obtain four or more flowers on a spike. They were prettier in clusters, than in spikes like the perennial species, and when many are produced on the same spike, the older flowers cease to be attractive before the uppermost ones expand.

WOLVERHAMPTON FLORAL FETE.

GREAT SHOW OF ROSES.

July 10, 11, 12.—The eighteenth annual Floral Fête, held in the well-kept West Park, Wolverhampton, now radiant with flowers, was a great success. Among flowers deserving special mention, reference may be made to the remarkably fine displays of Roses, which were the best ever seen at Wolverhampton. The success of Messrs. B. R. Cant & Sons, of Colchester, was most pronounced. They took six first prizes in the open classes. In the section devoted to specimen and miscellaneous plants (open) Messrs. Jas. Cypher & Sons, of Cheltenham, won four first prizes. The Sweet Peas shown by Mr. T. Jones, of Ruabon, surprised and delighted all who saw them.

In the non-competitive section, the exhibit of Messrs. Baker's, of Codsall, will long be remembered as the best of its kind ever attempted at Wolverhampton.

Upwards of 50,000 square feet of space was under canvas, each tent being connected by means of corridors. Rain fell about 11 o'clock on the opening day, and again very heavily in the afternoon. Great praise is due to the various officials responsible for the working of this important exhibition, for which about a hundred more entries were received than last year.

Plants (Open).

The principal class was for a group arranged for effect on a ground space not exceeding 350 square feet, for which prizes amounting to £57 10s. were offered, and for which entries were received from four competitors, whose exhibits were placed down the centre of a tent specially reserved for them. The groups were all constructed on pretty much the same principle, i.e., a tall mound in the centre crowned with a Palm, and at each of the four corners smaller mounds. The premier prize of £25 was awarded to Messrs. Jas. Cypher & Sons, Queen's Road, Cheltenham, whose group was beautifully arranged, and contained a selection of plants and cut-flowers of such things as Phalænopsis, Odontoglossums, delicately-coloured Cattleyas, Onciiums, Clerodendron fallax, Liliums, highly-coloured foliage plants, graceful Aralias, tall Jacarandas, Palms, Ferns, and silver-leaved Grasses, the whole being edged with Caladium argyrites and Saxifraga sarmentosa superba. The 2nd prize was won by a new competitor, Mr. W. Holmes, West End Nurseries, Chesterfield, for an artistically-arranged, but rather thin, group, in which light and yellow-coloured foliage plants were used with good effect. Mr. W. Vause, Leamington, and Mr. W. Manning, Derby, also obtained prizes in this class.

A class for twelve stove and greenhouse plants, not fewer than six to be in bloom (Orchids excluded), only brought three competitors. Here again Messrs. Jas. Cypher & Sons carried off the leading prize of £15 with superb Statices, Ixoras, &c. 2nd, Mr. W. Vause, with smaller plants not nearly so well flowered.

The best six exotic Ferns came from J. A. Kenrick, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer).

The principal specimen plant class was for twenty plants grown in pots not exceeding 8 inches in diameter. Eight, at least, were to be in bloom. Messrs. Jas. Cypher & Sons and Mr. W. Vause were the only exhibitors. The 1st prize of £10 was easily won by Messrs. Cypher & Sons, who had eighteen plants in flower and two large richly-coloured broad-leaved Codiæums. The flowering plants were Ixora Williamsi (4), I. Pilgrimi (1), I. Fraseri (1), Allamanda Williamsi (2), Chironia ixifera (3), Statice intermedia (3), Begonia Gloire de Lorraine (2), and Clerodendron fallax (2).

For a group of one class of flowering plants, arranged on the ground in a space of 9 feet by 5 feet, only two exhibitors competed. The 1st prize was awarded to H. Lovatt, Esq., Low Hill, Bushbury (gr. Mr. R. Sharpe), for well-flowered Cannas; the plants were about 2 feet high, and grown in small pots. 2nd, B. H. Mander, Esq., Trysull, Wolverhampton (gr. Mr. C. Weaver), with a bright display of Clerodendron fallax.

For a group of tuberous Begonias, arranged for effect on a table 10 feet by 5 feet, there were four exhibitors, and last year's winner, Mr. F. Davis, of Pershore, easily won the 1st prize with a grand lot of double varieties, some of the flowers measuring 6 inches across.

The 1st prize of £6 offered for the best six Orchids in flower was easily won by Messrs. Jas. Cypher & Sons.

Roses (Open).

Roses were particularly good, and quite a show in themselves. The principal class was for seventy-two distinct varieties, for which £42 was offered. Five competitors entered, and after a very close contest Messrs. B. R. Cant & Sons, Colchester, were awarded the 1st prize of £20. The blooms of Duke of Wellington, Le Havre, Hugh Dickson, Madame Victor Verdier, Alfred Colomb, Souvenir d'Elise Vardon, Frau Karl Druschki, and Suzanne Marie Rodocanachi were of perfect shape and quality.

For forty-eight distinct varieties, Messrs. B. R. Cant & Sons were also first, with superb flowers of Mildred Grant, Dean Hole, Dupuy Jamain and Ulrich Brunner, &c., and first for twelve distinct varieties, three blooms of each.

There were four exhibits of twelve bunches of

Roses to be shown, with foliage and buds as cut from the plants, each bunch to contain not fewer than three spikes or stems. Mr. J. MATTOCK, Oxford, won the 1st prize with the varieties Liberty, Anna Olivier, Comtesse de Nadaillac, Marie Van Houtte, Kaiserin Augusta Victoria, Madame Ravary, Papillon, Prince de Bulgarie, Frau Karl Druschki, Madame Abel Chatenay, Mrs. W. J. Grant, and Clara Watson.

The 1st prize, consisting of a gold medal and £2, for a dozen Roses put into commerce during the years 1903-4-5, fell to last year's winners, Messrs. A. DICKSON & SONS, Newtownards, with superb blooms, the most meritorious varieties being Mrs. Bateman, Dean Hole, Hugh Dickson, and Lady Ashtown; 2nd, Mr. HUGH DICKSON, Belfast, whose flowers were almost as fine as those from Messrs. A. DICKSON & SONS.

The best dozen blooms of any light-coloured Rose came from Messrs. B. R. CANT & SONS, who staged shapely flowers of Mildred Grant; 2nd, Messrs. D. PRIOR & SON, with Bessie Brown. So good and so numerous were the flowers staged in this class, that the judges awarded an extra prize to Mr. GEO. PRINCE for a grand exhibit of Mildred Grant. Messrs. B. R. CANT & SONS showed the twelve finest dark Roses, having the variety Horace Vernet.

The best dozen distinct varieties of Tea Roses came from Mr. GEORGE PRINCE.

For nine distinct varieties of Teas and Noisettes staged in vases, five blooms of each, on a space of 5 feet by 3 feet, Messrs. D. PRIOR & SON won the 1st prize, and Mr. G. PRINCE the 2nd prize.

Nine bowls of Roses were staged, the best being from Messrs. PERKINS & SONS, of Coventry, Mr. J. BARROW being 2nd.

Competition was also keen in the class provided for vases of cut Roses. 1st, Mr. J. BARROW; 2nd, Mr. W. J. GARNER.

In classes reserved for amateurs, we noted the names of Rev. J. H. PEMBERTON, Havering-atte-Bower; R. F. HOBBS, Worcester; F. DENNISON, Kenilworth; and others among the leading prize takers.

BOUQUETS AND CUT FLOWERS (Open).

Messrs. PERKINS & SONS, Coventry, took 1st prize for Bridal, Bridesmaids', and a bouquet for the hand, Mr. W. J. GARNER, Hale, being 2nd in each case.

For the most effectively-arranged group of decorative plants and cut-flowers on staging 6 feet by 4 feet, Mr. W. FINCH, Coventry, beat C. T. MANDER, Esq., Compton (gr. Mr. J. S. Simpson), his only opponent. The winning group contained beautiful Gloxinias, Cattleyas, and Anthuriums.

The finest collection of hardy border flowers shown in competition came from Messrs. G. GIBSON & Co., Bedale, who covered a space of 15 feet by 5 feet with a magnificent exhibit, in which were huge bunches of Delphiniums, Phloxes, Iceland Poppies, Campanulas, Gaillardias, Pæonies, Liliums, and Spanish Irises.

A Silver Cup, value £5 5s., and £20 in cash was well won by the LEAMINGTON NURSERYMEN & FLORISTS Co., Leamington, with a pretty group of foliage and flowering plants, intermingled with cut Cattleyas, Oncidiums, Carnations, &c.

Three prizes, amounting to £9 10s., were offered for arrangements of Pansies and Violas on a space of 7 feet by 3 feet. Six exhibits were staged, and Mr. J. E. KNIGHT, Wolverhampton, was placed 1st, with flowers displayed in vases and rustic stands.

Two classes for dinner table decorations were provided, one open and the other confined to amateurs. The leading prize of £5 in the first-named class was secured by Mr. W. J. GARNER, Hale.

SWEET PEAS.

Sweet Peas were extensively shown, the exhibits from Mr. T. JONES, of Ruabon, being remarkable for quality, variety, and freshness. For eighteen varieties, Mr. T. JONES gained the 1st prize, and W. D. WINTERBOTTOM, Esq., Derby (gr. Mr. G. Brown), was 2nd.

Prizes offered by Mr. H. Eckford, of Wem, Salop, for twelve varieties went as follow:—1st, Mr. T. JONES; 2nd, Lord HATHERTON, Penkridge (gr. Mr. H. Taylor).

The strongest competition was in the class provided by Mr. Robert Sydenham, of Birmingham, who offered, in addition to cash, a large gold medal for the best display of twelve distinct varieties. The winner was Mr. A. G. HOLFORD, Eccleshall, with superb flowers borne on strong stems.

Mr. T. JONES carried off the 1st prize offered by Messrs. Baker's, Wolverhampton, for six varieties.

PLANTS (Amateurs).

For a group of plants in or out of flower, arranged for effect on a space not to exceed 300 square feet, entries were received from three exhibitors. The 1st prize of £10 was well won by J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), whose group contained some richly-coloured foliage plants and choice flowering subjects admirably arranged.

J. A. KENRICK, Esq. (gr. Mr. A. Cryer), had the best six specimen stove and greenhouse plants and best collection of twelve Begonias.

Four groups of Caladiums were shown, and H. LOVATT, Esq. (gr. Mr. R. Sharpe), was awarded the 1st prize. C. MARSTON, Esq., Compton (gr. Mr. W. E. Wall), staged the best collection of Gloxinias.

FRUIT AND VEGETABLES.

Fruit was shown in splendid condition, and the competition between the winners of 1st and 2nd prizes in the principal classes was very keen.

The 1st prize in a class for a collection of eight dishes of fruit was won by the Earl of HARRINGTON (gr. Mr. J. H. Goodacre), with a magnificent lot, showing very high culture, his Black Hambro', Muscat of Alexandria Grapes, Violet Hative and Royal George Peaches, Pine Apple and Early Rivers Nectarines were of very fine quality. 2nd, Lord SAVILLE, Rufford Abbey (gr. Mr. J. Doe).

The best four bunches of grapes in distinct varieties were shown by Mr. J. DOE, with heavy bunches of Buckland Sweetwater (probably 5 lb. each, but lacking in colour), Muscat of Alexandria, Madresfield Court, and Black Hambro'.

Lord SAVILLE won the 1st prize for two bunches of black Grapes with finely-coloured fruit of Madresfield Court.

Lord SAVILLE won the 1st prize for two white bunches with Muscat of Alexandria.

The Earl of LATHOM (Ormskirk (gr. Mr. B. Ashton), won the 1st prize for Peaches and Nectarines, with five fruits of Gross Mignonne and Pine Apple.

Lord SAVILLE had the best Melons with Royal Jubilee and Sutton's Scarlet.

The 1st prize in a class for collection of six dishes of fruit (gentlemen gardeners only) was won by Mr. J. H. GOODACRE.

The 1st prize in the special class for vegetables in which the prizes were offered by Messrs. SUTTON & SONS, Reading, was won by Lord ALDENHAM, Elstree (gr. Mr. E. Beckett).

The Earl of CARNARVON (gr. Mr. J. Read) won the 1st prize for a collection in Messrs. WEBB & SONS' class.

MISCELLANEOUS EXHIBITS.

From Messrs. WEBB & SONS, Stourbridge, came an attractive display of indoor flowering plants and hardy border flowers. The centre of the group was composed of Gloxinias, and on either side were some lovely Sweet Peas and fragrant Stocks. A pretty background was afforded by the use of Liliums, Hydrangeas, and Delphiniums. (Silver Medal.)

Mr. ROBERT BOLTON, Warton, Carnforth, showed 30 vases of lovely Sweet Peas, some of which are new. (Silver Medal.)

Messrs. DICKSONS, Chester, contributed an extensive and well-arranged group of border flowers and Roses. The first-named were represented by bold clumps of Pæonies, Gladioli, Dianthus annulatus, stately Delphiniums, and splendid flowers of Romneya Coulteri. (Gold Medal.)

A collection of Violas arranged in sprays came from Mr. H. PATTISON, Cherry Orchard, Shrewsbury. (Silver Medal.)

Messrs. E. & H. SUCKLING, Lichfield Street, Wolverhampton, sent floral devices. (Silver Medal.)

The largest, brightest, and most meritorious non-competitive exhibit came from Messrs. BAKER'S, of Codsall and Wolverhampton, who had wonderful collections of Roses, Sweet Peas, Zonal Pelargoniums, herbaceous and Alpine plants. The Roses were shown in boxes, large vases, and bamboo stands. Next to the Roses were some exceedingly good Sweet Peas, and a collection of hardy cut flowers and Alpine plants in great variety. In addition to a Gold Medal, a Silver Bowl and Certificate of Merit were unanimously awarded to Messrs. BAKER'S for this instructive and pretty exhibit.

Mr. JOHN E. KNIGHT, Tettenhall, Wolverhampton, showed a miscellaneous group, consisting largely of hardy flowers, Caladiums, and Bamboos.

Mr. CHARLES HOLDEN, Butt Lane, Hinckley, sent Sweet Peas. (Bronze Medal.)

Mr. A. Webster, chief of the West Park, Wolverhampton, exhibited, on behalf of the WOLVERHAMPTON BATHS & PARKS COMMITTEE, a large semi-circular group of indoor foliage and flowering plants, the leading features of which were Cannas, Schizanthus, Liliums, Gloxinias, Pancratiums, Petunias, and Campanulas. (Gold Medal.)

Mr. RICHARD LOWE, Tettenhall Nurseries, Wolverhampton, sent foliage and flowering plants. (Bronze Medal.)

Messrs. HEWITT & Co., Solihull, Birmingham, furnished a table with a good selection of hardy flowers and cut Roses. Amongst the first-named were noted very fine clumps of Japanese Irises, Œnothera Fraseri, Campanulas, and Lilies. (Silver Medal.)

Mr. JOSEPH LAMBERT, Dalmeny, Southport, exhibited silvered table decorations, in which were placed Carnations, Sweet Peas, etc. (Bronze Medal.)

Mr. ROBERT SYDENHAM, Birmingham, also had rustic table decorations and Sweet Peas. (Silver Medal.)

Messrs. SUTTON & SONS, Reading, sent miscellaneous flowering plants; also Melons, and some excellent dishes of Tomatos, Cucumbers, and culinary Peas. (Gold Medal.)

Two dozen sprays of Zonal Pelargoniums, four boxes of lovely Roses, some Sweet Peas, and new Centaureas were contributed by Messrs. JARMAN & Co., Chard, Somerset. (Silver Medal.)

Messrs. TOM B. DOBBS & Co., Wolverhampton, constructed a model garden on the lawn. Beds filled with flowers, the paths edged with rock, over which arches clothed with Roses, were admired by many visitors. (Gold Medal and Certificate of Merit.)

Mr. C. H. HERBERT, Arock's Green, Birmingham, sent Carnations and Pinks nicely arranged in bamboo stands. Here a new strong-growing Pink named Progress was noted, with large, shapely, light rose-purple flowers marked with crimson near the base of the petals. (Bronze Medal.)

A miscellaneous group of indoor plants, cut flowers, and hardy shrubs came from Messrs. CLIBRAN & SONS, Altrincham. "Malmaison" and Tree Carnations were fresh and good, and plants of the gold and silver-leaved Aralia sinensis were effective. (Silver Medal.)

Messrs. WALTER KNIGHT & Co., Bradmore, staged an assortment of flowering plants and cut flowers. (Silver Medal.)

CAMBRIDGE HORTICULTURAL.

JULY 10.—The annual summer exhibition of this society was held on the above date, in the grounds of King's College, than which a more ideal place for a horticultural gathering could not well be found. All the classes were well filled and it was considered the best show that the society has held.

Roses.—Very liberal prizes were offered in the Rose classes, especially in that for thirty-six blooms, distinct, in which Messrs. BURRELL & Co., of Cambridge, were placed 1st, with a remarkably well-grown lot. 2nd, Messrs. F. CANT & Co., Colchester. Messrs. BURRELL also won in the class for twenty-four blooms, distinct, and for twelve Tea and Noisette varieties; Messrs. CANT & Co. being 2nd in both classes. The successful exhibitors in the district classes were Messrs. DOBBS, MILLER, Rev. O. FISHER, and Mr. T. W. Birkinshaw (gr. to Sir CHARLES HAMILTON, Bart., Hatley Park).

Miscellaneous Cut Flowers.—Cut flowers of hardy plants formed a glorious display. Mr. R. W. HALL won 1st prize with a splendid collection of eighteen varieties, while for twelve varieties Mr. W. PETERS gained 1st honours. Classes for annuals was a charming feature, the 1st prize in the largest class fell to Mr. T. TOPP, while Mr. R. W. HALL won a similar

places for six varieties. The 1st prize for twelve Irises was won by Mr. J. CATLING.

Plants.—The groups of plants were arranged in a pleasing manner, prizes being taken by Mr. W. P. NEAL, Mr. J. KIRKPATRICK, and Dr. BOND in the order named. Tuberous-rooting Begonias were grandly shown, Dr. BOND gaining 1st honours in the largest class; 2nd, Mr. T. DIGGLE. Mr. L. WARREN was 1st for six Begonias, while the best six double varieties were shown by Mr. R. J. FULLER. The premier award for six foliage plants went to Mr. A. HARDING; 2nd, Dr. SANDYS. The best six plants suitable for table decoration were shown by Mr. T. TODD; 2nd, Mr. W. P. NEAL. Of great excellence were the tables of plants arranged for effect. The 1st prize was awarded to Mr. J. KIRKPATRICK; 2nd, Dr. SANDYS.

Fruits and Vegetables.—Mr. T. W. BIRKINSHAW obtained premier honours in the class for six dishes of dessert fruits, the collection including remarkably good Nectarines, Peaches, Tartarian Cherries, the Earl's Favourite Melon, Royal Sovereign Strawberries, and good clusters of Black Hambro Grapes; 2nd, Mr. T. DIGGLE. Mr. T. W. BIRKINSHAW won the 1st prize in the class for a stand of Grapes, showing a fine bunch of Foster's Seedling, weighing upwards of 5 lbs., and having well-finished berries. Dr. BOND was first for a single dish of Peaches. Mr. T. W. BIRKINSHAW gained the 1st prize for a superb dish of Early Rivers Nectarines. The prize for a collection of eight kinds of vegetables was awarded Mr. T. TODD; 2nd, T. DIGGLE.

HANLEY FLORAL FETE.

JULY 4 AND 5.—The tenth annual floral exhibition, held under the auspices of the Borough Corporation of Hanley, Staffordshire, took place on these dates in the public park and resulted in the finest display of garden produce ever seen at Hanley. The number of entries was 497, as against 431 in 1905. The increase was accounted for by the greater number of Roses. Specimen plants were not largely represented, but groups for effect and smaller plants were staged in fine condition. Specially meritorious were the displays of Roses, the competition in these and in the fruit classes being very keen. The displays of Sweet Peas scarcely equalled those of previous years. Vegetables were staged in good condition. There were many good miscellaneous exhibits of a non-competitive nature.

The awards in the more important classes were as follow:—

The premier award for a group of plants arranged for effect, and occupying an area not exceeding 500 square feet, was won by Messrs. J. CYPHER & SONS, Cheltenham, with one of their usual meritorious exhibits put together in a most finished style.

The 1st prize for a similar smaller group not exceeding an area of 200 square feet, was secured by Mr. C. ROBERTS, Oswestry, with a light and graceful arrangement of Plants.

In a class for a group of Orchids in bloom, the plants were required to be arranged for effect, and were not to exceed an area of 100 square feet. The 1st prize was awarded Messrs. J. CYPHER & SONS, Cheltenham.

The best group of "Malmaison" and other Carnations was staged by Lord HENRY GROSVENOR, Tittenson Chace.

The best six plants in flower and six foliage plants were shown by Messrs. J. CYPHER & SONS, followed by Mr. W. VAUSE, and these exhibitors also won in this order in the classes for six plants in flower; for eight exotic Orchids; for six Palms; and for six foliage plants.

The largest class for Roses was for 72 blooms of distinct varieties. The 1st prize was taken by Messrs. A. DICKSON & SONS, Newtownards.

The KING'S ACRE COMPANY had 1st prize for 48 blooms of distinct varieties.

The prizes in the smaller class for 36 Roses in distinct varieties, three blooms of each variety, fell to the winners of the largest class.

Messrs. ALEX. DICKSON & SONS showed the best collection of 24 Hybrid Tea Roses, and they also had the best display of new Roses.

The best collection of hardy perennial flowers was shown by Messrs. HARKNESS & SONS, Bedale, and the best 12 varieties of Sweet Peas by Mr. A. G. HOLFORD, Ecclethall.

FRUIT AND VEGETABLES.

Fruit was largely and well shown, the decorated dessert tables and collections of fruit being of much merit.

Five displays were seen in the class for a decorated dessert table, that shown by Mr. N. F. Barnes (gr. to the Duke of WESTMINSTER, Eaton Hall) securing the highest (123) number of points.

In a class for twelve dishes of fruit, the schedule required not fewer than eight kinds and not more than two varieties of one kind; both black and white grapes were to be included, and flowers and foliage for decoration were allowed. Mr. J. H. GOODACRE was awarded the 1st prize; 2nd, J. DRAKE, Esq.

Mr. BARNES staged the best six dishes of fruit. Exhibitors in the previous class were restricted from entering in this.

Mr. GOODACRE won in the classes for four bunches of grapes, to include two bunches each of black and white varieties; for two bunches of Black Hambro', with fruits of fine colour; and for any other Black variety, with very good Muscat Hambro.

The best two bunches of Muscats of Alexandria were shown by Mr. J. MCPHERSON, while Mr. R. NISBET showed the best two bunches of any other White variety.

Mr. E. Beckett (gr. to Lord ALDENHAM, Aldenham House, Elstree) won the 1st prize for a collection of vegetables.

NON-COMPETITIVE EXHIBITS.

Messrs. BAKER, Wolverhampton, staged a fine exhibit of Roses, hardy flowers, &c. (Large Gold Medal.) Messrs. SUTTON & SONS, Reading, showed Melons, Gloxinias, Celsias, &c. (Gold Medal.) Mr. H. ECKFORD, Wem, displayed Sweet Peas. (Gold Medal.) Messrs. DOBBIE & Co., Rothesay, and Mr. C. E. WALTERS, Balcombe, were also awarded Gold Medals.

Silver Medals were awarded to Messrs. CLIBRAN, Altrincham; Messrs. JARMAN & Co., Chard; Messrs. HEATH & SONS, Cheltenham; Messrs. WEBB & SONS, Wordsley; and Messrs. PATTINSON, Shrewsbury.

ROYAL CALEDONIAN HORT. AND NATIONAL ROSE SOCIETIES.

JULY 18.—Half of the Waverley Market, Edinburgh, was set apart for this show, which was somewhat marred by the unfavourable weather. The Roses as a whole were not so large as might have been expected, and many of them bore marks of unfavourable weather. Sweet Peas had also suffered some damage from the same cause, but the show of these as a whole was a good one. Trade exhibits added greatly to the displays. There was a good attendance of visitors.

ROSES—OPEN CLASS.

The Jubilee Trophy for 36 blooms, distinct, was won by Messrs. A. DICKSON & SON, Newtownards, with fresh, well-coloured blooms, of which Mrs. W. J. Grant, Dean Hole, Mme. Crapelet, Mildred Grant, George Dickson (splendid crimson), Ellen Drew (lovely pink), Mrs. Sharman Crawford, Lady Ashton, and Souv. de P. Notting were the best examples; 2nd, Messrs. H. HARKNESS & Co., Hitchin.

The Class for 72 blooms, distinct, was also won by Messrs. DICKSON'S, with Messrs. HARKNESS again 2nd, Messrs. B. CANT & SON, Colchester, following. The blooms in each instance were less good than in Class 1. Messrs. DICKSON staged fine examples of Mrs. Myles Kennedy, Ulrich Brunner, Florence Pemberton, S. M. Rodocanachi, &c.

The best collection of 24 distinct varieties, three blooms of each, was shown by Messrs. B. CANT & SONS, with heavy, fresh, and well-coloured blooms, Papa Lambert, Frau Karl Druschki, Earl of Dufferin, Mildred Grant, Dean Hole, Madame Crapelet, Mme. Eug. Verdier, Ben Cant, Bessie Brown, and Alfred Colomb being the best. Messrs. A. DICKSON, Newtownards, were 2nd.

For 36 blooms, distinct, Mr. GEO. PRINCE, Oxford, won the 1st prize. Some of the blooms were well coloured, but most of them were of small size. 2nd, Messrs. J. JEFFRIES & SON, Cirencester.

Mr. PRINCE had the best collection of 16 varieties, three blooms each, with small, but fresh, blooms, Messrs. JEFFRIES & SON being 2nd.

The winner of the 1st prize for 18 distinct varieties (Tea and Noisettes) was Mr. PRINCE, with good White Maman Cochet, Medea, and Comtesse de Nadaillac. 2nd, Messrs. CANT & SONS.

Messrs. SIMPSON & SONS, Dundee, had the best collection of 12 blooms. 2nd, Messrs. JEFFRIES & SONS.

For 12 blooms of new varieties, Mr. HUGH DICKSON, Belfast, was 1st, with Mrs. Conway Jones, Richmond, Lady Ashton, Joseph Hill, H. Watson, Mrs. D. Niken, Princess M. Mertschersky, Mrs. Stewart Clarke, J. B. Clarke, and fine Lohengrin and Hugh Dickson. 2nd, Messrs. A. DICKSON & SONS.

The best dozen blooms of a white or yellow Rose were from Mr. PRINCE, who had rather small specimens of Maman Cochet; and the best Rose-coloured from Messrs. DICKSON'S, Edinburgh, who had Mrs. W. J. Grant; whilst the best crimson variety was J. B. Clarke, from Mr. DICKSON, Belfast.

In the class for the best 12 distinct varieties shown in vases Messrs. DICKSON & Co., Edinburgh, were 1st, with good Frau Karl Druschki, Caroline Testout, Captain Hayward, and Mrs. W. J. Grant. 2nd, Messrs. DICKSONS, Newtownards.

The competition for 18 varieties in a space of 8 feet by 3 feet was won by Mr. MATTOCK, Oxford, Messrs. PAUL & SONS being 2nd. Nothing in either exhibit was novel, though the latter firm showed Gottfried Keller, a semi-double of wondrous colour (copper and yellow).

The next class was for Roses arranged in bamboo stands, Mr. MATTOCK again winning the 1st prize, and Mr. GEO. PRINCE, Longworth, was 2nd.

There were classes for amateurs, in which the principal prizes were won by Messrs. F. DENNISON (Kenilworth), CONWAY JONES, Esq. (Gloucester), R. FOLEY HOBBS, Esq. (Worcester), the Rev. J. H. PEMBERTON, Mr. GEO. MOYLES, Mr. WHITTLE, Mr. E. MAWLEY (Sec. Nat. Rose Soc.), and Mr. E. B. LINDSELL.

Mr. Kidd, gr. to Lord ELPHINSTONE, Carbery Tower, had the best 16 vases of "Malmaison" Carnations; and the best collection of 12 bunches of Sweet Peas was shown by Mr. MALCOM, Duns. There was a good show of these sweet flowers. Mr. BRYDEN, Innerleithen, set up a grand lot of hardy flowers, for which the 1st prize was obtained.

FRUIT.

Displays of fruit were not numerous, Grapes being the most noteworthy feature. The best two bunches of Black Hamburgh were shown by Mr. BEISANT, Castle Huntly; 2nd, Mr. Stewart (gr. to Earl of LAUDERDALE), Thirlstane.

Mr. T. Young (gr. to Sir GEO. BULLOUGH), Isle of Rhum, was 1st for two bunches of white Grapes, with Muscat of Alexandria. Mr. YOUNG was also 1st for Nectarines, Mr. KIDD taking a similar place for Peaches. There were also classes for Strawberries, Melons, Figs, &c. A small display of vegetables was seen.

NON-COMPETITIVE EXHIBITS.

Messrs. DOBBIE & Co., Rothesay, set up an extensive array of cut flowers. (Silver Medal.)

Mr. FORBES, Buccleuch Nurseries, Hawick, staged a grand lot of herbaceous flowers. (Silver Medal.)

Messrs. J. GRIEVE & SON, Pilrig, Edinburgh, had a bright display of Violas. (Silver Medal.)

A delightful exhibit of pillar Roses was shown by Messrs SIMPSON & SONS, Dundee.

Messrs. STORRIE & STORRIE, Dundee, furnished a large table with fruiting Apple trees in pots, also Currants and Gooseberries. The same firm displayed Poppies, Sweet Peas, and Begonias. (Gold Medal.)

A charming exhibit of herbaceous flowers in great variety was staged by Messrs. JAMES COCKER & SONS, Aberdeen.

Messrs. GUNN & SONS, Olton, Birmingham, showed garden Phloxes. (Silver Medal.)

Messrs. CUNNINGHAME, FRASER & Co., Comely Bank, staged Alpine plants and herbaceous cut flowers. (Silver-Gilt Medal.)

Messrs. LAING & MATHER, Kelso, showed Carnations in variety. (Silver Medal.)

Mr. A. PERRY, Winchmore Hill, had Water Lilies in variety and vases of Richardia Elliottiana, and R. "Mrs. Roosevelt." (Silver Medal.)

Messrs. CAMPBELL & SON, High Blantyre, exhibited Pinks and Carnations and Cactus Dahlias. (Bronze Medal.)

MARKETS.

COVENT GARDEN, *July 18.*

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Asters, per dozen bunches	2 0	3 0
Callæthiopica, per dozen	2 6	4 0
Centaurea cyanus, doz. bunches	2 0	4 0
— suaveolens	3 0	4 0
Coreopsis grandiflora, per doz. bunches	1 6	2 0
Carnations, per dozen blooms, best American various	1 6	3 0
— smaller do.	1 0	2 6
— Malmaisons	3 0	8 0
Cattleyas, per doz. blooms	9 0	12 0
Chrysanthemums, per dz. blooms	2 0	3 0
Eucharis grandiflora, per doz. blooms	3 0	4 0
Gardenias, per doz. blooms	1 6	2 0
Gladiolus, various, per dz. bnchs.	9 0	12 0
— The Bride	3 0	4 0
— Brenchleyensis, per doz. spikes	3 0	4 0
Gypsophila elegans, per doz. bunches	2 0	3 0
— paniculata	2 6	4 0
Iris germanica, per bunch	0 9	1 0
— Spanish, per doz. bunches	1 6	3 0
Ixias	2 6	4 0
Lilium auratum	2 0	3 0
— candidum, per bunch	1 6	2 0
— lancifolium, rubrum and album	2 0	3 0
— longiflorum	3 0	4 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality	9 0	12 0
Marguerites, white, p. dz. bunches	2 0	3 0
Marguerites, yellow, p. dz. bchs.	2 0	3 0
Mignonette, dozen bunches	2 0	3 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per doz. bunches	3 0	5 0
— Zonal, double scarlet	4 0	5 0
Poppies (Iceland), per dz. bnchs.	1 0	2 0
— Oriental, per bunch	0 6	1 0
— Shirley	0 6	0 9
Pyrethrums, dozen bunches	1 6	2 6
Ranunculas, doz. bunches	4 0	6 0
Rhodanthe, per dz. bunches	2 0	3 0
Roses, 12 blooms, Niphetos	1 0	2 0
— Bridesmaid	2 0	3 0
— Kaiserin A. Victoria	2 0	2 6
— Caroline Testout	1 6	2 6
— C. Mermet	1 6	3 0
— General Jacqueminot	1 0	2 0
— in bunches, per dozen	3 0	6 0
— Liberty	2 0	6 0
— Madame Chatenay	2 0	4 0
— Mrs. J. Laing	2 0	4 0
— from the open, various kinds, per dz. bnchs.	2 0	5 0
Statice, per dozen bunches	4 0	6 0
Stephanotis, per dozen trusses	3 0	5 0
Stocks (double white) per doz. bunches	2 0	4 0
Sweet Peas, per doz. bunches	1 0	4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Asparagus plumosus, long trails, per doz.	5 0	10 0
— — medium, bunch	1 6	2 0
— —short sprays per bunch	0 6	0 9
— Sprengeri	0 6	1 0
Adiantum cuneatum, doz. bun.	4 0	6 0
Berberis, p. bunch	2 6	3 0
Croton leaves, per bunch	1 0	1 6
Cycas leaves, each	1 6	2 0
Fern, English, p. dozen bunches	1 0	2 0
Fern (French), doz. bunches	3 0	4 0
Hardy foliage (various), per dozen bunches	2 0	3 0
Hardy Grasses, per doz. bunches	2 0	3 0
Ivy-leaves, bronze	1 6	2 0
— long trails per bundle	1 0	2 0
— short green, doz. bunches	2 0	3 0
Moss, per gross	5 0	6 0
Myrtle, per dozen bunches	2 0	5 0
Smilax, p. dz. trails	2 0	5 0

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

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, per dozen	4 0	6 0
— larger	9 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	18 0	30 0
— variegated, per dozen	30 0	42 0
Asparagus plumosus nanus, doz.	9 0	12 0
— Sprengeri, doz.	6 0	8 0
— tenuissimus per dozen	8 0	10 0
Begonias (tuberous), per dozen	5 0	8 0
Boronia elatior, per dozen	18 0	24 0
Bouvardias, per dz.	6 0	8 0
Calceolarias, yellow	3 0	4 0
Campanula isophylla alba, per dozen	6 0	8 0
— Mayi	6 0	8 0
Chrysanthemum segetum	3 0	6 0
Clematis, per doz.	8 0	9 0
— in flower	18 0	24 0
Cocos Weddelliana, per dozen	9 0	18 0
Coleus	3 0	5 0
Coreopsis	6 0	8 0
Crassula, hybrid, per doz.	6 0	9 0
Crassula, larger size	18 0	24 0
— coccinea	18 0	21 0
Crotons, per dozen	12 0	30 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz	4 0	5 0
Dracænas, per doz.	9 0	24 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	7 0	10 0
— in small and large 60's	16 0	25 0
— in 48's, per doz.	4 0	10 0
— in 32's, per doz.	10 0	18 0
Ficus elastica, per dozen	9 0	18 0
— repens, per doz.	5 0	8 0
Fuchsias, per doz.	4 0	6 0
Heliotrope, per dz.	3 0	5 0
Hydrangea Hortensia, per dozen	8 0	18 0
— paniculata	6 0	18 0
Kentia Belmoreana, per dozen	12 0	18 0
— Forsteriana, per dozen	12 0	21 0
Latania borbonica, per dozen	12 0	18 0
Lilium auratum	18 0	24 0
— longiflorum, per dozen	12 0	18 0
— lancifolium, per dozen	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0
Lobelia	4 0	5 0
Marguerites, white, per dozen	4 0	8 0
— yellow	15 0	18 0
Mignonette, p. doz.	4 0	6 0
Musk, Harrison's, per doz.	3 0	5 0
Pelargoniums (Zonals), per dozen	3 0	5 0
— Ivy-leaved, per dozen	5 0	8 0
Pelargoniums, show	6 0	9 0
Petunias, double, per doz.	5 0	6 0
— 48's	4 0	6 0
— single	1 6	2 6
Rhodanthe, per dz.	4 0	6 0
Roses, per dozen	12 0	18 0
Selaginella, dozen	4 0	6 0
Spiræa japonica, per dozen	5 0	10 0
Verbena Miss Willmott, per doz.	6 0	8 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (English), ½ sieve	3 6	3 9
Apricots (French), per box	1 0	1 9
— ½ sieve	10 0	—
Bananas, bunch:		
— No. 1 quality	7 0	9 0
— No. 2 quality	6 0	7 0
— Extra quality	8 6	10 0
— Grants, per bunch	11 0	13 0
— Jamaica	4 6	6 0
— Loose, per dz.	0 8	1 3
Cherries (French),		
— boxes	1 0	2 0
— French, sqnares	2 0	3 6
— English, ½ sieve	5 0	12 0
— ½ sieve	3 6	6 0
— English, pecks from	3 9	5 6
— Big. Napoleon	6 6	7 0
— (English), per ½ sieve	5 6	8 6
— Elton Hearts	7 6	9 0
Big. Napoleon	11 0	14 0
Currants (English), red, per handle	1 0	1 6
— ½ sieve (French)	6 0	7 0
— black, ½ sieve	7 6	8 6
— English, pecks	3 0	3 6
— ½ sieve	1 0	1 6
— English, white, per gallon	1 6	2 0
Figs, per dozen	2 0	8 0
Grapes (English), Black Hambro, per lb.	0 10	1 6
— Alicante	1 3	1 9
— Colmars	1 6	2 0
— English, Muscat, per lb.	1 6	4 0
Gooseberries (English), ½ sieve	3 0	4 6
Greengages (French), p. box	2 0	2 4
— Italian, baskets	3 3	3 6
Lemons:		
— Messina, case	10 0	16 6
— Naples, p. case	20 0	28 0
Lychees, per box	0 10	1 0
Melons, each	1 0	3 0
Nectarines, English	4 0	18 0
Nuts, Colnuts, per doz. lb.	8 0	—
— Brazils, new, per cwt.	45 0	—
— Spanish, p. bag	42 0	13 0
— Barcelona, per bag	24 6	—
— Monkey Nuts, per bag	18 0	—
— Walnuts, dried, cwt.	35 0	—
— Chestnuts, Italian, per bag	13 6	15 0
— Cocoanuts, 100	10 6	13 6
Oranges, per case:		
— Murcia	16 0	18 0
— Jamaica	10 6	11 0
— Blood	9 6	11 6
Peaches (English), per dozen	4 0	18 0
— French, ½ sieve	5 6	6 6
— boxes	1 4	1 6
Pineapples, each	2 10	5 0
Plums (French), box	0 8	1 3
— Italian, baskets	19 0	—
Raspberries, per punt	0 4	0 6
— tubs	16 0	—
— per peck	2 0	3 0
Strawberries, kent, peck	2 0	4 0
— gallon	13	2 0
— punnetts	0 6	0 8

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Beans, Broad, per packet	0 6	—
— Broad (English), per bush.	2 0	—
— Home grown, per lb.	0 8	0 10
— Channel Island	0 8	0 10
Beetroot, bushel	1 0	—
Broccoli, sprouting, per bushel	1 6	1 9
— per doz.	1 0	2 0
Cabbages, Spring, per bag	1 6	—
— red, per bushel	1 6	2 0
Carrots, French pad	3 0	—
— per bag, unwashed	2 0	2 6
— new, per dozen bunches	4 0	—
Cauliflowers, per tally	3 0	10 0
Chow Chow, p. dz.	1 6	2 0
Cucumbers, dozen	2 0	2 6
Endive, per dozen	1 8	2 0
Horseradish, foreign, per dozen bundles	20 0	24 0
Leeks, 12 bundles	1 6	3 0
Lettuces, Cos, per dozen	2 0	—
Marrows, per doz.	3 0	4 0
Mint, per dozen	2 0	3 0
Mushrooms (house) per lb.	0 6	1 3
— Buttons, per lb.	0 9	1 3
Mustard and Cress, per dozen pun.	1 0	1 6
Onions (Valencia), case	6 0	6 6
— Egyptian, bag	4 6	5 0
— pickling, per bushel	3 6	4 0
— French, ½ bag	2 3	—
— Spring, dozen bunches	1 0	—
Parsley, 12 bunches	1 0	1 6
— bushel	2 6	
Peas (French flats)	3 0	6 0
— English, per bushel	1 0	—
Potatos new):—		
— Channel Island Kidneys	0 2½	0 3
— Jersey, cwt.	6 6	—
— St. Malo, cwt.	6 6	—
Rhubarb, per doz. bundles	2 6	—
Spring greens, per bushel	1 3	—
Salsafy, per dozen bundles	4 0	—
Tomatos:—		
— English, per lb.	3 6	4 9
— small selected	3 6	3 9
— Seconds, per 12 lbs.	2 0	—
— French, per crate	3 6	4 3
Turnips, per doz. bunches	1 0	1 6
— bags	1 0	—
Turnip Tops, bush.	1 0	1 6
Watercress, per doz. bunches	0 6	—

REMARKS.—English Tomatos are cheaper. Prices for Peaches and Nectarines are firmer, and good, large, well-coloured fruits are in demand. Raspberries are inclined to be a little dearer, especially those for jam making. The vegetable and fruit trade generally is quiet. *A. H. Kitt, Covent Garden, July 18, 1906.*

POTATOS.

Lincolns, 80s. to 90s.; Bedfords, 70s. to 80s.; Kents, 80s. to 100s.; Jerseys, 100s.; St. Malo, 90s. *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

The market now presents a rather deserted appearance most of the stands in the new portion were quite empty this morning. Some of the growers, however, continue to fill their stalls with good material. Mr. W. T. Child has good Zonal and Ivy-leaved Pelargoniums; Mr. Shoult has good Pelargoniums, &c.; Mr. Sweet is displaying Marguerites, Verbenas, &c.; Mr. T. Childs has very good Hydrangeas, Campanula Mayi, and useful Ferns; Mr. E. Rochford has good Crassulas, Liliums, Hydrangeas, &c.; Messrs. Ward Brothers are bringing good Marguerites, Fuchsias and Heliotropes; Mr. Mott has Mignonette, Pelargoniums, Fuchsias, &c.; Messrs. H. Evans & Sons have very good Coleus, Ferns, &c.; Messrs. J. Hill & Son's stands are well filled with Ferns, including many of the choicer sorts; Zonal Pelargoniums from Mr. T. Larsen are good; Messrs. Fuller Bros. have good Chrysanthemum segetum, Fuchsias, Marguerites, &c. On Mr. Hutching's stands I noted good Chrysanthemum (Marguerite) Queen Alexandra. Mr. H. Cull is still bringing in good Zonal Pelargoniums. Mr. H. B. May continues to fill his stands with a variety of useful plants, including Kochia scoparia, which is also coming from Mr. Thompson's nurseries, whom, I am told, received it from the Continent under the name of Kochia trichophila, that grown under the name of K. scoparia having proved of no use for market work. As other growers may procure the wrong plant, this is a matter which should be noted. Messrs. H. Low & Co. have their stands well filled with Palms of various sizes. Mr. R. Brost, Mr. Bause and Mr. Durrard also continue to send Palms. Lily of the Valley and Rose Madame Levavasseur, from Messrs. T. Rochford & Sons, are both good.

CUT FLOWERS.

Trade now varies considerably, and choice flowers are not so plentiful as formerly, although quite equal to all ordinary demands. Growers soon ascertain when there is an extra demand, and put up prices correspondingly. On two occasions recently, Liliums have quickly advanced in prices, but the increase was only temporary. Far too many Roses from the open ground are seen, but the very best quality blooms are not so plentiful. The same may be said of Carnations, of which too many of second quality are seen. I find "Malmaisons" are rather low in prices except for extra special blooms. American varieties are still good. Chinese Asters are hardly of first quality; pink and the white are the only colours I have seen up to the present. Centaurea suaveolens, the ordinary yellow sweet Sultan, is very nice; the white and the mauve varieties are also seen. Sweet Peas, supplies of which fell off a little, are now over plentiful again. Gaillardias, Coreopsis, Delphiniums, Malvas, and other hardy flowers arrive from all parts of the country. Scabiosa caucasica is very pretty, also Statice latifolia in white, yellow and blue varieties. Liliums are fairly plentiful again. L. candidum from the open brings down the prices of L. longiflorum. Chrysanthemums from Mr. P. Ladds are still remarkably good, also Iceland Poppies from Mr. J. Lowe. At closing time this morning much useful material was unsold. Growers complain of bad trade, but I think the chief fault is that supplies are over abundant. *A. H., Covent Garden Market, July 18.*

SCHEDULE RECEIVED.

NATIONAL CARNATION AND PICOTEE SOCIETY'S (Southern Section) twenty-ninth annual report, and schedule of prizes for their exhibition on Tuesday, July 24, 1906, in the Royal Horticultural Hall, Westminster.

POLITICAL GARDENERS.—At Watford on Monday last the hearing was resumed of the charge against EDWIN LAYTON under the Corrupt Practices Act, it being alleged that he dismissed a gardener for voting on the Liberal side at the last election. Mr. GRAHAM-CAMPBELL prosecuted for the Treasury, and Mr. BODKIN defended. MONTAGUE, the head gardener, recalled, admitted that Mr LAYTON said that he did not wish to be hard, and if the three gardeners had not anything to do they need not hurry away. HERBERT JOHN WINTERS, the under gardener, said that he asked his master if they were dismissed because of their political views, and he said "Yes." *Daily Graphic.*

Obituary.

BENJAMIN MARKS.—The death occurred recently of Mr. Marks, who for the last 15 years has been head gardener to Guy Milner-Gibson Cullum, Esq., Hardwick, Bury St. Edmunds, and formerly head gardener to C. R. Palmer-Morewood, Esq., of Altreton Park, Derbyshire.

ENQUIRIES AND REPLIES.

LATHYRUS NERVOSUS.—Can anyone tell me where I can obtain seeds or plants (preferably seeds) of Lathyrus nervosus? *L. A. D.*

ANSWERS TO CORRESPONDENTS.

ASTERS DISEASED. *J. P. H.* The plants are attacked with a fungoid disease, Erysiphe Cichoracearum. The plant and soil should be sprayed every five days, until the disease is checked, with a solution of permanganate of potash (Condy's Fluid), diluted with water to a pale rose colour.

BEECH COCCUS.—*C. Bliss & Co.* If labour can be spared for the purpose the best manner of clearing the trees of this pest is to scrub the bark and its crevices with caustic soda wash or with petroleum emulsion. The trees can be

sprayed in the autumn with either of these insecticides, but the scrubbing brush is the best remedy. This is quite practicable as the Coccus only attacks the main trunk and the larger branches.

Black Muscat: *F. B. P.* This excellent Grape is in general cultivation, its name being Muscat Hamburgh. It is sometimes described as the Black Muscat of Alexandria. There are other varieties regarded as Black Muscat Grapes, such as Mrs. Prince, Madresfield Court, Meurthe Frontignan, &c. Muscat Hamburgh is reddish rather than black.

Cercospora Melonis: *W. C. B.* This disease of Melons and Cucumbers was first described in the *Gardeners' Chronicle*, September 5, 1896, p. 271, by Dr. M. C. Cooke, and a very full account was also given on p. 241 in our issue for October 4, 1902, in which a spraying with potassium sulphide, 2 ozs. to 3 gallons of water, adding 2 ozs. of soft soap, was recommended as a cure. It is important that the under surface of the leaves be thoroughly wetted with the solution. The soil should also be drenched with the dissolved potassium salt. Diseased leaves should be removed and burned before they decay and fall to the ground. If possible do not grow Melons or Cucumbers in the same house for a season or two. Carbolic acid stood about the house in jars has been known to do much good in checking this disease.

Cotoneaster: *J. M.* This genus is not, so far as we know, poisonous to cattle. The plants contain tannin, but no virulent poison.

Cucumber: *C. B.* Your plants are affected with a fungus. Burn the diseased plants.

Cycas revoluta: *F. S.* It is not uncommon for this stove plant to produce male cones in this country.

Fruit, Flower and Vegetable Trades' Journal: *A. W. S.* The address is 139, Salisbury Court, Fleet Street, London.

Grape Spot: *F. L.* Your berries are affected with spot, so often described in our columns—see last week's issue, p. 40.

Green Peas and French Beans. *W. J. M., Isleworth.* To bottle, shell the Peas and put them into wide-mouthed bottles. The Beans are better wiped dry and put into the bottles whole. Shake them together so that they may lie as closely together as possible. Cork the bottles well and seal the corks. Bury the bottles in the driest part of the garden, and take them up as they are wanted. They should keep good for five or six months.

Insecticides: *J. P.* Apply to Messrs. Strawson's, 71A, Queen Victoria Street, London, E.C.

Names of Plants: *J. L.* Pithecoctenium cynanchoides, D C. A native of Brazil.—*H. G. P.* 1, Magnolia acuminata; 2, Rubus odoratus; 3, Berberis vulgaris; 4, Gaultheria Shallon; 5, Andromeda calyculata; 6, Euonymus latifolius.—*B. M. S.* Spiræa chamædrifolia.—*Trehane.* 1, Pyrethrum corymbosum; 2, Orchis latifolia, a very fine form; 3, Erigeron philadelphicus.—*R. H. W.* 1, Euphorbia chamæcyparissus, 2, Dianthus cæsius; 3, not recognised.—*T. O.* 1, Thuya dolabrata; 2, Tsuga Pattoniana; 3, Juniperus virginiana; 4, Tsuga canadensis; 5, Abies orientalis, 6, Thuya filifera.—*R. M.* Phillyrea augustifolia.—*L. H.* 1, Chrysanthemum segetum; 2, Galega, sp. not recognised; 3, Orchis maculata. 4, Philadelphus coronarius; 5, Oxalis Bowiei.—*W. H. D.* Seed pod, probably of some Gleditschia, of no use to the cook. The Mint-like plant is Mentha Requieni.—*F. S.* Seedling, probably of some composite. Send when further advanced.—*Nemo.* 1, Spiræa Ulmaria; 2, Spiræa Filipendula; 3, Allium Moly; 4, Scabiosa caucasica; 5, Phlomis fruticosa; 6, Hemerocallis fulva; 7, Inula glandulosa; 8, not recognised.—*A. Y. L.* The greenish flower is Lycaste Barringtoniæ; 2, Sarcanthus, probably Williamsoni. The Cypripedium Stonei is a very good variety.—*W. I., Belfast.* 1, Oncidium flexuosum; 2, Oncidium obryzatum, 3, Oncidium luridum; 4, Odontoglossum Hunnewellianum; 5, Sophronitis cernua; 6, Ada aurantiaca. *Berks.* Oncidium leucochilum and Adiantum Waltoni. *V. E. I.* 1, Selaginella helvetica; 2, Selaginella umbrosa, 3, Selaginella lævigata.—*A. G.* Alstrœmeria Pelegrina; 2, Centranthus ruber; 3, Galega officinalis; 4, Hemerocallis fulva.—*M. A.* 1, Lilium superbum, 2, Dictamnus Fraxinella. *A. J. K.* 1, Sidalcea malvæflora; 2, Campanula species; 3, Senebiera coronopus.—*W. K., Droitwich.* 1, Sedum Ewersi; 2, Alchemilla vulgaris; 3, Sedum spurium; 4, Spiræa Filipendula; 5, Sedum album; 6, Heuchera sanguinea.—*C. A. B.* Rubus odoratus.—*W. B. R.* Polygonum Baldshuanicum.—*H. C.* 1, Colutea arborescens; 2, Eccremocarpus scaber; 3, Centranthus ruber.—*G. L.* 1, A species of Ononis, send when in flower; 2, Spiræa Douglasi; 3, Spiræa salicifolia; 4, Lychnis Haageana, 5, Epimedium, send when in flower; 6, Tiarella cordifolia.—*R. R.* 1, Eucomis punctata; 2, Fuchsia procumbens; 3, Cystopteris fragilis; 4, Polypodium Dryopteris; 5, Asplenium bulbiferum; 6, Oreodaphne californica.—*M. R. M.* Odontoglossum Lindleyanum.—*T. R.* 1, Dabeocia polifolia alba; 2, Santolina incana; 3, Veronica Traversi; 4, Spiræa Bumalda; 5, Agrostemma coronaria alba; 6, Centranthus ruber; 7, Escallonia macrantha.—*W. J. W.* Pavia lutea, sometimes called Aesculus.—*A. L. F.* 1, Campanula, probably C. Rapunculus; 2, Chrysanthemum maximum; 3, Aster alpinus; 4, Hieracium aurantiacum; 5, not recognised; 6, Verbascum species.

"New" Potatos at Christmas: *T. T.* The following method is described by a correspondent as having answered admirably. First of all dig a hole 3 feet in depth, and procure some biscuit tins about 9 inches long and 4 inches wide, having close-fitting lids. Tubers of a kidney-shaped Potato having a smooth skin should be selected for storing. Snowdrop is a suitable variety, and as each root of Potato is dug pick up the tubers and put them in a basket, which should be immediately covered with haulm or anything to prevent the tubers from drying. When sufficient has been dug, take them to a shed and pack them thickly into the biscuit tins. No soil or any material is put with them. The tins should then be buried in the hole prepared for them, and a stick put in the ground to denote their whereabouts. It is best to select medium sized tubers, just such tubers as are generally described as "new" Potatos. Remember that it is necessary to dig and store the tubers away in the tins before the skins are set, or they won't keep well, nor afterwards scrape like "new" Potatos. A little green or dried Mint should be boiled with the tubers. If properly stored in the manner indicated, they are quite equal when cooked at Christmas or early in spring to those new Potatos sent from the Jersey and Guernsey islands in the early spring.

Onions Diseased: *C. H. T.* The plants are affected with the Onion mildew, Peronospora Schleideni. In the early stages of the disease it may be checked by dusting with powdered lime and sulphur, using twice as much lime as sulphur. Spraying with potassium sulphide ½ oz. to a gallon of water—is also recommended. Onions should not be grown on the same spot of land for three years, by which time all the spores in the soil will have perished. Damp and shaded situations favour the spread of the disease.

Peas: *H. G.* Pea mildew. You can do nothing practical now but burn the affected plants; next season you might spray with some weak fungicide while the plants are young.

Pelargoniums: *H. C.* The coloration is probably due to drought or dry conditions. It is not to be despised. *Rockum.* The cuttings have been planted too deeply and have probably been over-watered—conditions which favour the development of the fungus.

Plants Dying: *H. C.* Without knowing more of the circumstances we cannot give a definite opinion. We find neither insect nor fungus—and agree with you that the case is a suspicious one.

Soil: *J. S.* We are unable to assist you unless we could tell what the fungus is.

Sphagnum-Moss. *A. v. d. G.* We do not know what worms you mean. Kindly send specimens with a little of the Moss also, packed separately.

Sport: *Evelyn.* The term "sport" may be applied to any variation arising from buds, but is also loosely applied to variation from seeds. Reversion to a previous type would be more correctly described as "atavism" than a sport, but it is a sport or variation nevertheless, and is frequently described as being a sport because it is not always known at the time that the variation is identical with a form which existed previously. In gardens the term "sport" is generally held to describe a variation arising from the bud. Bud variations are "sportive," but the exact reasons for such variations are not apparent, though they may generally be cases of atavism, or in other instances they may be due to the separation of previously blended characteristics. Variations resulting from sexual action should not be termed "sports." The word is not a strictly scientific term, and, therefore, it is used somewhat loosely.

Strawberries: *B. H.* The variety Royal Sovereign is the most commonly grown Strawberry in this country, but its flavour is inferior to that of some older varieties, including Sir Joseph Paxton which is less acid.

Strawberry Grubs: *J. R. K.* What you send are weevil grubs. Trap them with slices of Carrot or Potato.

The "Double" White Lily: *W. E.* In this form no true flowers are formed, but a series of white bracts. It is a very old form and is mentioned in the old herbals, we think in Parkinson & Gerard.

To Make Pot Pourri: *F. A. W.* This is but little used now, but here is an old-fashioned recipe for it which may interest you. Put into a large china jar the following ingredients in layers, with bay salt strewed between the layers: Two pecks of damask Roses, part in bud and part bloom; Violets; Orange flowers and Jasmine a handful of each; Orris root sliced; Benjamin and Storax, 2 ounces of each; a ¼ ounce Musk; a ¼ lb. Angelica root sliced; a quart of the red parts of Clove Gillyflowers; two handfuls of Lavender flowers; half a handful of Rosemary flowers; Bay and Laurel leaves, half a handful of each; three Seville Oranges stuck as full of Cloves as possible, dried in a cool oven and pounded; half a handful of knotted Marjoram, and two handfuls of Balm of Gilead, dried; cover all quite close. When the pot is uncovered the perfume is very fine. Here is a simpler recipe, which is more to your purpose: three handfuls of Rose petals; three of Orange flowers; three of Clove Pinks; one of knotted Marjoram; one of Lemon Thyme: six Bay leaves; a handful of Rosemary; one of Myrtle; half a one of Mint; one of Lavender; the rind of a Lemon and a ¼ ounce of Cloves. Chop all, put the ingredients in layers with pounded bay salt between them up to the top of the jar. If all the ingredients cannot be obtained at once, put them into the jar as you get them, always throwing in salt with every new article.

Tomato Spot: *R. B.* See answer to *R. F.*, in our last issue, p. 40.

Tomatos: *W. B.* We know of no better market variety than Lister's Prolific if obtained true. Carter's Sunrise is also a capital sort for the same purpose. Such a book as you enquire for is *Tomato Culture for Amateurs*, by B. C. Ravenscroft, to be obtained from our publishing department, price 1s. 1d. post free.

To Preserve Lemon Juice: *Querist.* It is a very difficult matter to preserve Lemon juice without the admixture of spirit. It would be necessary, as you wish it to keep for months, to mix a small quantity of borax or salicylic acid with the juice. Your chemist would tell you the proper quantity, but I do not think, from personal experience, that you would care for the mixture. Lemon juice is most valuable when it is used from fresh Lemons. The aromatic flavour of the Lemon is chiefly in the rind close to the surface of the Lemon, not in the white part. Any Lemon-squeezer will do to express the juice; preferably use a glass one, as metal is apt to impart an unpleasant flavour to the juice. *E. M.*

Communications Received.—M. Cogniaux, Nivelles—M. Durand, Brussels—M. Milleard, Bombay—F. A. W.—F.—W. J. M.—E. H., Cape Town—F. B.—C. Sprenger, Naples—W. E. G.—Miss E.—H. M.—M. D. B. S., photos—A. G., photos—J. H. G.—Corycius senex—H. C. (many thanks for donation of 3s. to Royal Gardeners' Orphan Fund)—C. W. S.—I. L. R. photos—W. G.—W. E. G.—J. H. G.—Sir T. L.—Gebruder Borntrager.—W. W.—Hans Güssow.—Drawing—Soc. Roy. d'Agric. et de Botan. de Gand.—H. P. C.—J. B. W.—W. W. P.—P. V., Paris, with thanks.—J. E. R. N.—Hon. Mrs. B.—Subscriber.—H. A. S.—S. W. E.—C. A. B.—W. L.—J. F.—J. W.—J. T. S.—I. W. A. C.—G. B. M.—D. B.—G. A.—E. W. & Sons.—J. D. C.—F. R.—S. A.

WATERFALL IN THE GARDEN OF MRS. SAUNDERS, THE KNOLL, TORQUAY.

Temple Press Ltd., Printers, 7–15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,022.—SATURDAY, July 28, 1906.

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ILLUSTRATIONS.

A RIVERSIDE PARADISE.

IT lies on a curve of the river between Shepperton and Chertsey—a modest villa washed by Thames, as the villa of Horace's friend Dellius was washed by yellow Tiber; standing on some ten acres of land, consisting of ancient islands, with a river frontage of about 800 yards. The approach is only from the Thames, communication with the outer world being maintained by the means of a jolly young waterman with an ever-present punt. This ferries visitors to a narrow landing between bushes of fragrant mock-orange, whence steps lead up to a pretty two-storied, verandah-bordered house, bearing on its front a felicitous motto from Tibullus:—

Jam modo iners possim contentus vivere parvo,
Nec semper longæ deditus esse viæ:
Sed Canis æstivos ortus vitare sub umbra
Arboris, ad rivos prætereuntis aquæ.

which, being interpreted, becomes

Here, fancy free, and scorning needless show,
Let me from Life's dull round awhile retreat,
Lulled by the full-charged stream's unceasing flow,
Screened by tall willows from the dogstar's heat.

A little way off is a second, smaller house, bearing a legend, less classical, but not less apt:—

Parva, sed apta mihi, sed nulli obnoxia, sed non
Sordida, parta meo sed tamen ære, domus.

It will run thus in English:

'Tis tiny, but it suits me quite,
Invades no jealous neighbour's right,
'Tis neat and clean, and—pleasant thought—
I earned the cash with which 'twas bought.

The two houses stand in an open space, which supplies room also for a well-equipped boat-house, and a couple of lawn-tennis grounds, interspersed with lush meadow grasses, Foxtail, Cocksfoot, Holcus, Arrhenatherum, and tall Poa. The concrete paths are bordered with garden annuals, Tropæolums, Poppies, Clarkias, Eschscholtzias—those punctual chronometers, which, whether in cloud or sunshine, just now open before 9 a.m. and close at 4 p.m. There is a profusion of the brilliant little Eutoca, of its kinsfolk the Nemophilas, of the strange-looking Phacelia, of the large pink Malope, of orange Cheiranthus, blue Centaury, Limnanthes (beloved of bees), Linarias and Candytufts', with, here and there, dwarfing its neighbours, the Virgin Mary's Thistle. Sown early, these illuminate the border through the summer season, and are not cast into the oven until the retreat is deserted and the house shut up in autumn.

This open space is surrounded on all sides by thickly-planted Willows, whose fleecy seeds fill the air in June like snowflakes or white butterflies; they are lined with Philadelphus grandiflorus, and amongst them are Hawthorns, black and Lombardy Poplars, and low trees of Rhamnus catharticus. Roughly kept paths of 7 feet wide are cut through their entire length, revealing a varied and interesting riparian wild Flora. The common Nettle (Urtica dioica), usually a repellent plant, here rises to a height of 7 or 8 feet; its inflorescence stunted or effaced by the deep shade, its leaves and stems of unwonted size and richness. Amongst it here and there grow plantations of feathery Digraphis arundinacea, with Comfrey, white, blue, and sometimes crimson. By these only the thickest Willow growth is peopled: so soon as the trees become less crowded and admit more light, we have luxuriant masses of Valerian (V. officinalis), mixed with Meadowsweet and Thalictrum flavum; occasional clumps of yellow Iris warning thinly-shod ladies against patches of swampy ground. Heracleum giganteum, by some accident introduced, towers high where it can get a chance; on it, or on pendent boughs, climbs the large Bindweed, with its pure white trumpet-shaped blooms and frail pointed leaves. The purple Bittersweet, confused popularly with the very different Deadly Nightshade, twines here and there among the Hawthorns. The paths are carpeted with ground Ivy and the delicate Wood Pimpernel; show occasional wild raspberry, and currant, black and red: Angelica promises autumnal bloom, and Rape, washed in by floods, sprinkles its yellow flowers everywhere. The disagreeable weed of the plantations is the Cleavers, Galium Aparine; it grapples and tears down all tender plants, covers the ground with strangled heaps, and withers soon into an ugly yellow decay. Only in the spring can it be eradicated, not without great labour, which would not, however, be wasted in this lovely wilderness.

Beyond the demesne on the land side is Chertsey Mead, a level meadow of vast extent, stretching away towards St. Ann's Hill, the home during his later years of Charles James Fox. But the Willow Grove is islanded by a backwater or eddy of the Thames, wide at first, then continued into a narrow ditch. The eddy exhibits on both sides the typical Thames flora. On its still waters float Water Lilies, white and yellow, and the lovely fringed bog-bean Villarsia (Limnanthemum) nymphæoides; on its bank stands up the Sweet Rush (Acorus calamus), with its wrinkled, fragrant leaves and long stiff flowering spathe, the Sparganium, the Flowering Rush (Butomus umbellatus), known here as "Pride of the Thames," Water Parsnip, Marshgold still in fruit, Bidens cernua, Sneezewort (Achillæa ptarmica), blue Forget-me-not, Marsh Ragwort, Gipsywort, and Mint. There is the so-called red Loosestrife (Lythrum Salicaria) side by side with Willow herb, the Codlins and Cream of our Childhood, and bushes of the true yellow Loosestrife, its English name a clumsy adaptation of the Greek Lysimachia, though what the General Lysimachus had to do with it no one seems to know. On the shallow edges are Water Plantain, Arrowhead, square-stalked St. John's Wort; just above, the water round-headed Garlic, established somehow in this unlikely place, the bright blue Skull-cap, Marsh Wound Wort (Stachys palustris), Nasturtium palustre, own brother to Water Cress, Fig Wort, on whose pretty blooms wasps will be swarming by and by, the two fine Carices, riparia and pendula, with the red inflorescence and magnificent leaves of Rumex hydrolapathum. A curious American plant, the Orange Balsam (Impatiens fulva), imported somehow into the banks of the Wey, and profuse on these banks ten years ago, is now all but extinct, in consequence of the great summer flood of 1903. The continuing ditch is fenced by nettles, unattractive in the open, but deterrent to invading trippers; amongst and underneath them, neighboured by baser quality, like the Bishop of Ely's strawberry in Shakspeare, straggle in cerulean profusion masses of the lovely Geranium sylvaticum.

If the Retreat is a Paradise for mortals, it is no less an aviary for birds. Pigeons and doves croon and coo from the tree-tops; we have

Blackbird and thrush in every bush,
Stare, linnet, and cock sparrow,

as in Elizabethan Heywood's pretty song; sedge-warbler, willow-warbler, reed-warbler, wood-warbler, blackcap, nest and sing and chatter in the willows, the grasshopper warbler trills, cricket-like, out of sight, wagtails haunt the landing place, and the flycatcher poises for his excursions on the eaves. They rouse one another in earliest morning, before the thrush and blackbird; then the awakened sleeper through his opened window enjoys their soft orchestra, distinguishing with trained ear the hurried twitter, or the plaintive mellow repetition, or the continued roundelay, or the defiant chiding, or the garrulous, grating remonstrance of each tiny songster. To the close growth of the foliage round them is due, no doubt, their immunity from the enemies who share their home: the sparrow hawk, the white, tawny, long-eared, and short-eared owl, and, most dangerous of all, the silent creeping stoat. Of other larger birds we have the spotted, but not the green woodpecker; the landrail croaks confidentially from the meadow, and to our annual kingfisher's nest a second has this year been added. Such cuckoo vocalisation, while June lasted, I never heard. It began at 2.30 a.m. and continued till after dark. It gave us all the strains in its repertory; the cuc-cuc-cuc-koo, the very unusual cuc-koo-koo, the descending interval in the

minor third, the soft love note cule-cule, the cackle, the harsh chatter. An American lady was in the house when the chant was at its height. She thought at first it was a cuckoo clock, that being the only form in which Wordsworth's "wandering voice" was known to her: for the American cuckoo, though domestically minded, unlike our profligate rover, is voiceless. We were able to show her the phenomenon of a cuckoo foundling; an egg rather larger than, but closely allied in marking to, the four legitimate eggs in a sedge-warbler's nest. It was soon afterwards hatched: the native eggs disappeared; the supplanter grew into a great sprawling mass of feathers, opening a cavernous orange-coloured mouth and snapping viciously at any approaching finger; the poor foster parents feeding it unwearicdly. It is still, in mid-July, conducting itself with hereditary irregularity, but must in a few days quit the nest.

From wild birds to tame is an easy transition; and I must not overlook a pair of stately swans, the gentleman and lady pensioners of our river side, who daily rely upon the inmates for food. Six eggs were hatched in June, but three chicks fell a prey to rats, and the survivors swim after the parents now, the old birds refraining from the food thrown out until the young appetites are satisfied.

I might draw lessons from virtuous swans and vicious cuckoos; from aspiring bindweed and clinging hop; from punctual Eschscholtzia, converted Nettle, encroaching, short-lived Cleavers. But I remember how, when I was a boy, I carefully erased the officious "L'Envoy" from every fable in my Æsop; and I simply photograph our Paradise, leaving those to point its moral, who prefer a parable to an idyll. *Corycius Senex.*

HOODIA CURRORI.

Kew is indebted to Mr. J. Gossweiler, of Portuguese West Africa, for two good plants of this remarkable Stapelia-like plant, which he forwarded two years ago. He found them growing "in scoriaceous matter of granite rocks at Leangue, twenty miles from the coast of Benguella." They were subjected to dry or succulent treatment at Kew. But this treatment did not suit them, and so one was tried in a hot moist house along with Caladiums. Here it plumped up quickly, rooted, and in a few weeks started into growth and flowered perfectly. The second plant has done equally well under the same treatment, and is in flower now (July 21). The moral of this is obvious. The Hoodias, of which four species are known, may be called thick stemmed Stapelias: indeed, Mr. N. E. Brown, in a masterly revision of Stapeliæ, published in Hooker's *Icones Plantarum*, Vol. X (1890), says there is very little in any of their botanical characters to justify keeping them apart from Stapelias. H. Currori is the third species to flower at Kew. The first was H. Gordoni, sent to Kew in 1874 by Sir Henry Barkly, then Governor of the Cape. It forms a cluster of erect succulent stems covered with rows of spine-tipped tubercles, and bears yellow flowers 4 inches across, suggestive of a big Œnothera, but of course much more fleshy. It is not now in cultivation, but there is a good figure of it in the *Botanical Magazine*, t. 6,228, and a photo-illustration in *Gardeners' Chronicle*, 1873, p. 576.

H. Bainii was introduced from Beaufort West in 1876, where it was found by the traveller, Thomas Bain. It flowered at Kew in 1877, and a figure of it was published in the *Botanical Magazine*, t. 6,348. It has yellow, purple-tinted flowers, somewhat smaller than H. Gordoni and more cup-shaped.

H. Currori was discovered in 1879 by Dr. Curror, of H.M.S. Water-Witch, in barren, sandy mountains at Elephant's Bay, West Africa, but it has not been known in cultivation before the present time. The plant in flower now at Kew has a stem 2¼ inches in diameter, 12 inches high (they are said to grow to a height of 2 feet), with 12 longitudinal ridges, each formed of some 30 or so confluent spine-tipped mammæ. The flowers are 5 inches in diameter, saucer-shaped, the inside surface covered with soft hairs and coloured dull rosy-lilac with darker radiating lines: the outer surface is glabrous and paler. The flowers last at least a month, and in addition to their size and other attractions they have the very excellent quality of being non-odoriferous, in which respect they differ very much from the Stapelias proper.

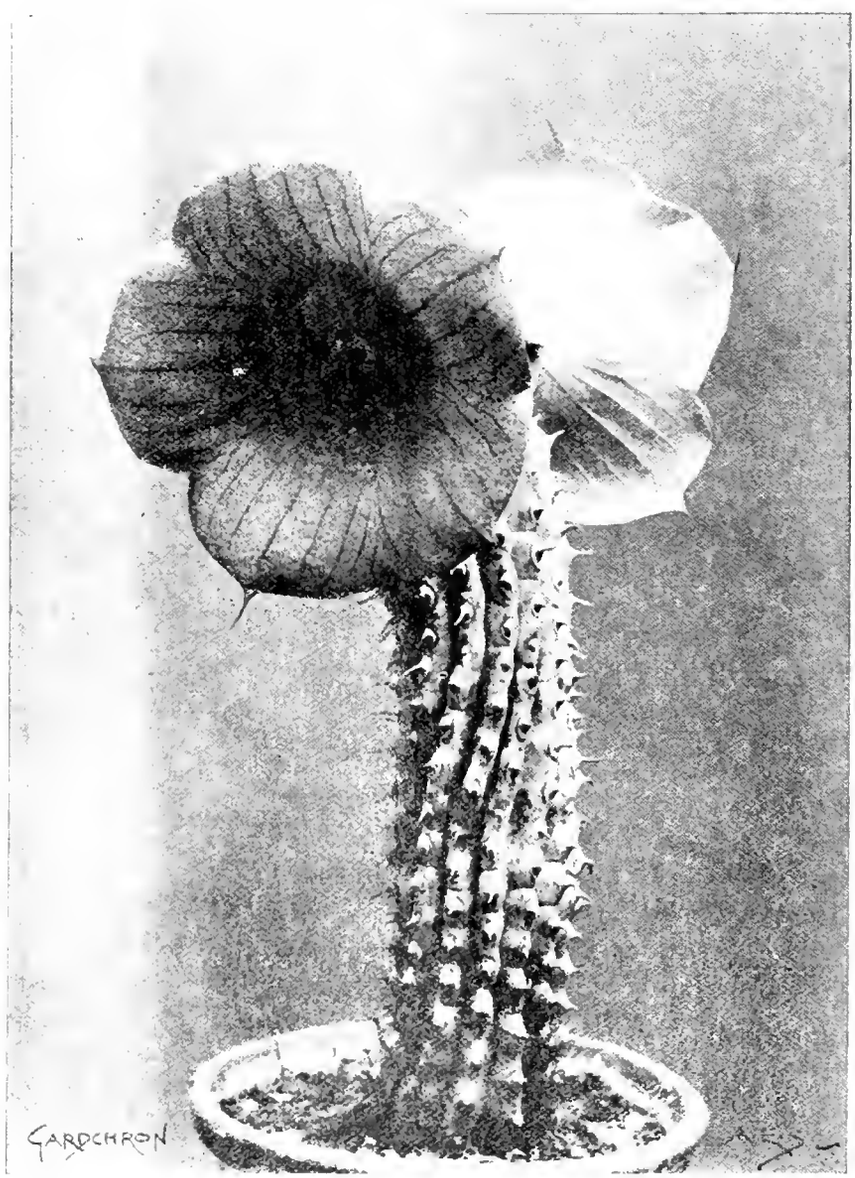


FIG. 27.—HOODIA CURRORI, FLOWERING FOR FIRST TIME AT KEW IN JUNE LAST. FLOWERS YELLOW FLUSHED WITH ROSE, REDUCED ABOUT ONE-HALF.

The Week's Work.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Clevelcy, Allerton, Liverpool.

Pelargoniums that, having flowered early, have been cut back, will now be growing freely, and should be shaken out of their pots, repotted into smaller ones, and placed in a cold frame, keeping the frame somewhat closed for a few days afterwards. Any plants which have flowered later should be exposed to the influences of the sun and air, and be kept drier at the roots, by which treatment the wood will become thoroughly matured previous to the plants being cut back. Where it is desirable to increase the stock, a few cuttings may be rooted singly in small pots, selecting for this purpose short-jointed and partly-matured wood, which will root freely.

Calceolarias.—When the seedlings are large enough, carefully prick them off into small pots, and place them in a frame having a north aspect, keeping the frame closed for a few days. Very careful watering at this stage is necessary, otherwise the young plants will become diseased at the roots. If the sittings of charcoal are used in the potting compost there will be less danger of the plants "going off" in a young state. Fumigate the plants regularly but very moderately.

Fuchsias.—Afford liquid manure to plants which are now flowering freely. Remove the old flowers regularly before they form seed. A few more cuttings may now be propagated, and, when they have rooted, shift them on into 60-size pots. If these are kept growing gently through the winter, they will make useful plants for flowering early next season.

Begonias, as they get past their best, should be encouraged to grow for some little time longer, after which gradually reduce the supply of water at the roots previous to their going to rest.

General Remarks.—The present time affords an opportunity to thoroughly overhaul, clean, and paint, if necessary, the interior of houses, also pits and frame from which the general stock of plants has been removed for a short time outside. If work of this kind is taken in hand at

once, the structures will be ready to receive the plants when the time arrives for housing them. Insert cuttings of Ixoras, Stephanotis, Dipladenias, Allamandas, Dracænas, Crotons, and Pandanus, selecting short-jointed, half-ripened wood for this purpose.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Plum trees in pots.—All the fruit having been gathered from early varieties, the trees should now be plunged out of doors, affording them good soakings of water and an occasional dose of diluted liquid manure. When these early varieties have been taken outside, the later ones may be given more room in the houses, and they should, if possible, be staged by themselves. Continue to keep the shoots pinched back, and to afford liberal stimulants to the roots. The syringe should be applied frequently, using clear water as free from lime as possible, in order not to leave any marks on the fruit.

Melons in frames will be swelling their fruits rapidly, and should be given all the encouragement possible by giving them abundance of water and applications of weak liquid manure twice a week until they are on the point of ripening. Remove all surplus growths as they appear, and fix the fruits in such a position that they will be exposed to the light and sun; inverted flower pots will do very well for this purpose. Plants that will fruit in succession to those growing in frames, and are now in the flowering stage, may be kept a little drier, both at the roots and as regards atmosphere. Larger fruits are not so much appreciated as those which weigh two or three pounds each, for once a Melon has been cut into it will not retain its full flavour until the next day. Plants that have small fruits in the stage of their first swelling will be greatly benefited by giving them a top-dressing of loam and a little bone-meal added. Syringe the plants, and close the frames early on bright afternoons.

Strawberries.—The earliest batch of runners for next season's fruiting under glass should now be ready for transferring into their fruiting pots. The most suitable compost for them is one of good turfy loam, with a little manure from an old Mushroom bed which has been passed through a three-quarter-inch riddle, adding a sprinkling of bone-meal and soot, and thoroughly mixing all these ingredients together. Let the plants be thoroughly well watered before turning them out of the small pots, and the fresh pots be cleansed if they have been used previously. Place about 1 inch deep of crocks in the bottom of each pot, and then a sprinkling of half-inch bones over the crocks, but these bones must be old and perfectly dry, to prevent the introduction of maggots into the soil. After potting they should be placed on the north side for about ten days, and be sprinkled overhead each evening with a fine-rose can. Afterwards arrange the plants in an open quarter in the kitchen garden where they will be exposed to full sunshine. They should be stood on a hard base of ashes or boards which will prevent worms from getting into the pots. Remove all runners as they appear. Later layers of runners should now be cut from the old plants and treated similarly. To obtain success in the forcing of Strawberries it is necessary to get the plants into the final pots as early as possible.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

The Perennial (Herbaceous) Lobelia.—Lobelia fulgens and L. cardinalis and their varieties are indispensable for the ornamentation of the flower garden, and are worthy of being grown in large numbers, because of the brilliancy of their rich crimson flowers in late summer and autumn, and for their stately and erect habit of growth. They are well adapted for use in all phases of gardening. In the formal system these Lobelias are invaluable for ribbon-borders, or in making bold centres for beds or designs, where their coloured foliage and flaring flowers become singularly appropriate. Again, in the mixed borders, if arranged in groups in congenial companionship with other flower colours, they yield a gorgeous display, the effect of which lasts long into the autumn. But perhaps the best effect is obtained by their use as an adjunct in connection with water gardening. In the wild garden fringing the sides of the stream, or in masses planted in the shallow margin of a pond, backed by Japanese Irises and other water-loving plants, they create a sheet of colour, and together form a picture as pleasing and effective as it is possible to imagine. Planted in the way described, provided that it is possible to lower the water in the ponds in the winter time a foot or so to permit the base of the plants to remain comparatively dry, the Lobelia—at any rate in the south and south-west—will continue in these positions undisturbed all the year round. During the hot summer and autumn months, the plants delight in having the water about their roots, and, in fact, do not resent being slightly submerged. For the ornamentation of formal ponds and tanks, nothing can be better than well-filled boxes of these Lobelias tastefully arranged in informal groups, standing on supports either of bricks or drain pipes in the water, just allowing the surface to cover the top of the soil, which, in conjunction with groups of Water Lilies, can be made very effective. In October these boxes can be easily removed to a cold frame or some dry sheltered position for the winter.

Propagation.—The present is a good time to raise plants from seed. The seeds should be sown in shallow boxes or pans, and placed in a cool, shaded frame to germinate. As soon as the seedlings are large enough to handle, they should be potted off singly. During winter they should be given the protection of a cold frame, and by May or June of next year they ought to be fit for planting out into their flowering positions. Where there is a sufficiency of old plants, propagation is best accomplished by division of the roots, or by cuttings, which can be done very readily in the spring. The mode usually practised is to put the divisions or cuttings into single pots, and then to plunge them in moderate bottom heat in the frame of the propagating house. The affording of water must be carefully attended to during all the growing season, as the lack of moisture at their roots would be detrimental to these species of Lobelia. The soil they thrive best in is a rich loamy soil strengthened with the presence of good cow manure.

Varieties.—Splendens, often referred to as a species, is in reality a variety of L. fulgens, and is well worth growing for its beautiful flowers of exquisite colour. Other varieties of L. fulgens which should not be omitted from one's collection, and which are undoubtedly superior to the types are "Queen Victoria," possessing immense, deep vermilion flowers with red-tinted foliage; "Firefly," bright crimson flowers; "Violacea," reddish-violet flowers, with red foliage; and "Heavenly Blue," which is distinct from the rest in having clear, light-blue flowers. All these plants grow about 3 feet in height. The best varieties of L. cardinalis are "Crimson Beauty" and "atrosanguinea." The former is a lovely variety, with deep red flowers and very effective dark red foliage, while the latter is a beautiful dark form of the type.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Spring Cabbages.—The first sowing of these must now be made without further delay. Let the utmost importance be attached to having the soil in a suitable condition as regards tilth and moisture. Water the ground well before sowing rather than apply water directly afterwards.

Turnips.—Sow a large breadth of this vegetable to help in maintaining a regular supply of fresh produce until the winter has well commenced. Fork the ground over, and when the lines have been drawn, well water them before sowing the seeds. Select the varieties "Snowball" or "Model White," together with Golden Ball for sowing at this date, and for a later supply the old variety Chirk Castle, which is one of the best for withstanding the winter.

Runner Beans.—Plants having now topped the stakes, they should be closely pinched back, both on the top and side growths. Loss is often occasioned by the overcrowding of the shoots. Topdress the lines with litter, and apply ample supplies of water.

Carrots.—Still another small sowing may prove very useful late in the season, selecting one of the earliest varieties, as Immitable Forcing or Early Nantes, the former yielding small round roots, and the latter longer roots, but splendid in colour.

French Beans.—There is still time to sow another succession of these, but it would be well to sow them in a position where they could be easily afforded protection from frost, should this prove to be necessary. Frames containing no crop may be made good use of now by sowing such seeds in them, and growing them as if in the open, but having the sashes ready for covering the frames when the autumn weather demands it.

THE HARDY FRUIT GARDEN.

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

Fig Trees.—Examine these and remove the points of the strong shoots again. Expose the fruits as much as practicable, and take away all shoots that will not be required in the future. If the young shoots are thinned out sufficiently at the present time but little further thinning will be needed this season. Make all shoots secure to the wall. Any long ugly shoots, which may have perhaps only a bunch of leaves on the top, may be conveniently cut away at this time. If the roots are confined to restricted borders, a thorough soaking with a liquid will be an advantage to the swelling fruits. The liquid may be such as is obtained from the sewage tank, or even clear water.

Peaches and Nectarines.—Let the fruits of mid-season varieties be exposed to the sunshine as much as possible, in the same manner as was adopted for earlier ripening varieties. The process of propping up should be carried out on each tree about three weeks before the fruit will be ripe. Afford abundance of water to the roots and well syringe the foliage daily. A few waterings with the XL-All graduating manure would do good.

Autumn Fruiting Raspberry Belle de Fontenay.—Thin out the growths (canes) of this, leaving only the best and strongest. The plants will produce a good supply of fruit during October, but they need moisture and much mulching.

THE ORCHID HOUSES.

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

Sobralias.—These Orchids, remarkable for the size of the individual flowers, are beginning to find more favour with cultivators. At several recent shows of the Royal Horticultural Society they have been greatly admired. There are many species which are well worth including in a collection of Orchids, as S. macrantha, its pure white variety Kienastiana (alba), S. xantholeuca, S. Holfordi, S. Sanderiana, S. Lindeni, S. Lucasiana, and S. Ruckeri, to which may be added the following hybrids: S. Veitchi, S. Wigamæ, S. Amesiæ, &c. Several of the smaller flowering species are pretty, but the flowers are more fugacious. Such are S. virginalis, S. Warscewiczii, S. lilliastrum, S. violacea alba, S. speciosissima, &c. As a rule the individual flowers of Sobralias do not last in good condition more than three or four days, but each reed-like stem will produce in succession from three to six blooms, so that a good-sized specimen plant will for several weeks have from six to a dozen blooms in almost perfect condition each day. Sobralias have usually strong fleshy roots, and, being terrestrial plants, require plenty of pot room. Those which have become pot-bound and are obviously suffering from want of root space may be re-potted at any time, being careful not to injure the roots, which are now growing freely, more than can be avoided. Early spring is probably the most suitable time for dividing large specimens. The pots should be furnished with 2 or 3 inches deep of crocks for drainage, and for potting let the compost consist of lumpy fibrous peat and rough sandy loam in equal parts, mixing a moderate quantity of broken crocks to ensure porosity. The soil should be made moderately firm, pressing it down to half an inch below the rim of the pot, thus leaving space for affording water, which is required in quantity during the growing season. Sobralias succeed well in a light position in the intermediate house the whole year round, but in winter the leaves are liable to become spotted and unsightly if the atmospheric temperature is allowed to fall for any considerable length of time below 55°, especially if the atmosphere of the house is naturally damp.

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 70.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND:										
0, Scotland, N.										
CAITHNESS	Average; good	.....	.....	Under	...	.....	Average; good	Average; very good	.....	W. F. Mackenzie, The Gardens, Thurso Castle, Thurso
MORAYSHIRE	Average	Under	Under	Under	Under	Under	Average	Over; very good	.....	William Ogg, The Gardens, Duffus House, Elgin.
	Under; bad	Under	Under	Under	Average	Under	Under	Average; good	.....	D. Cunningham, Darnaway Castle Gardens, Forres.
ORKNEYS	Under; good	Under; bad	.....	Under; bad	Over; good	.....	Under; bad	Average; good	.....	Thos. MacDonald, Balfour Castle Gardens, Kirkwall.
SUTHERLANDSHIRE	Over	Under	Under	Under	.....	... ..	Over	Average	Average	D. Melville, Dunrobin Castle Gardens, Golspie.
	Under	Under; bad	Under; bad	Under	Average; very good	Under; bad	Average; good	Average very good	.....	J. McIvor, The Gardens, Skibo Castle, Dornoch.
1, Scotland, E.										
ABERDEENSHIRE ...	Under; good	Under; good	Under; bad	Under; good	.....	.....	Average; good	Average; good	.....	James Grant, Rothienorman Gardens, Rothie.
	Under	Under	Much under	.....	... ..	... .	Under	Average	.....	John Brown, Delgaty Castle Gardens, Turriff, N.B.
	Under	Under	Under; bad	Under; bad	.....	Under	Average	Average; good	... ..	Simon Campbell, Fyvie Castle Gardens, Fyvie.
	Average; good	Under; good	... .	Average; very good	... ..	.....	Under; good	Average; good	.....	John M. Troup, Balmoral Castle Gardens, Ballater.
BANFFSHIRE	Average	Under	Under	Under; good	Average	Over	Average	Over; very good	.....	Alex. Morton, Cullen House Gardens, Cullen.
	Average, good	Under; bad	Under; bad	Under	.....	... ..	Average; good	Over; very good	.....	Geo. Edwards, Ballindalloch Castle Gardens, Ballindalloch.
BERWICKSHIRE	Under, bad	Under; bad	Average; good	Average; good	.....	. .	Average; good	Over; very good	.....	Robert Stuart, Thirlstane Castle Gardens, Lauder.
CLACKMANNANSHIRE	Under	Under	Under	Average	Average	Average	Average	Average; good	.....	A. Kirk, Norwood Gardens, Alloa.
	Under	Under	Under	Average	.....	... ..	Average	Average	.....	A. Blackwood, Academy Gardens, Dollar.
EAST LOTHIAN	Under, good	Under; good	Under; good	Under	Average; good	Average; good	Under	Under; bad	... ..	R. P. Brotherston, Tynninghame Gardens.
	Under; good	Average; good	Under; good	Average	Under; good	Average; good	Over; good	Average; good	... ..	William Galloway, Gosford Gardens, Longniddry.
FIFESHIRE	Under	Under	.....	Under	..	Under	Average	Under	.....	William Henderson, Balbirnie Gardens, Markinch.
	Under, very late	Under	Under; bad	Under; bad	... ..	Under; bad	Average	Average; good	.....	Peter McRobbie, Tarvit Gardens, Cupar.
	Under	Under	Under	Under	... ..	Under	Under	Average	... ..	Chas. Simpson, Wemyss Castle Gardens, E. Wemyss
FORFARSHIRE	Under	Under	Under	Under	..	.....	Under	Under	.....	W. McDowall, Brechin Castle Gardens, Brechin.
	Under	Under	Under	Average	... ..	Under	Under	Average; good	... ..	Thos. Wilson, Glamis Castle Gardens, Glamis.
	Average	Under	Under	Average	... ..	.....	Average; good	Average; good	... .	William Alison, The Gardens, Seaview, Monifieth.
KINCARDINESHIRE	Under; good	... ..	.....	.....	... ..	... .	Average	Average; good	... .	John M. Brown, Blackhall Castle Gardens, Banchory.
	Under	Average	Under	Average	... ..	... ..	Under	Average	.....	William Knight, Fasque Gardens, Laurencekirk.
MIDLOTHIAN	Under	Under	Under	Under	.	Average	Average	Average	... ..	Wm. Pirie, Dalhousie Castle Gardens, Bonnyrigg, N.B.
	Under, very good	Under; very good	.....	Under; bad	Average	Average	Under	Average; very good	Under	James Whytock, Dalkeith Gardens, Dalkeith.
PEEBLESSHIRE	Under, good	Under	Under; bad	Under; good	.....	... ..	Under; good	Average; good	... ..	William Young, Stobo Castle Gardens, Stobo.
	Under	Under	Under	Under	.....	.....	Average	Average; good	... ..	Wm. McDonald, Cardrona Traquair, Innerleithen.
PERTHSHIRE	Under; good	Average	Under	Under	Average, good	Under	Average; good	Average; good	... ..	J. Farquharson, Kinfauns Castle Gardens.
	Under	Under	Under	Under	.....	... .	Average	Average	.....	John Robb, Catherinebank, Milnab Terrace, Crieff.
	Under; good	Under	Under	Average	Average	.....	Average; good	Average; good	.....	James Ewing, Castle Menzies, Aberfeldy.
6, Scotland, W.										
ARGYLLSHIRE	Under, good	Under; good	Under; good	Under; bad	Average; good	.....	Over; very good	Over; good	.....	D. S. Melville, Poltalloch Gardens, Lochgilphead.
	Over	Under	Under	Under	.....	.....	Average	Average	Under	Henry Scott, Torloisk Gardens, Aros, Isle of Mull
AYRSHIRE	Under, bad	Under; bad	Under; good	Under; bad	.....	.....	Average	Under; bad	.....	William Priest, Eglinton Gardens, Kilwinning.
	Under, very good	Under, bad	Under; bad	Under; bad	Average; good	Average; good	Average; good	Average; good	Average	D. Buchanan, Bargany Gardens, Dailly.
BUTESHIRE	Under	Under	Average	Under	Average	.....	Under	Good	.....	M. Heron, Mount Stewart Gardens, Rothesay.
DUMBARTONSHIRE	Under	Under	Under	Under	.....	Average	Average	Over; good	Under	George McKay, Balloch Castle Gardens.
	Under	Under	Under	Average, good	Average	.....	Over; very good	Over	... ..	D. Stewart, Knockderry Castle Gardens, Cove.
DUMFRIESSHIRE ...	Average, good	.....	Under	Under	.....	Under	Average	Average; good	.....	John Urquhart, Haddom Castle Gdns., Ecclefechan.
	Average, good	Under, bad	Average, good	Under; bad	.....	.....	Average; good	Average; very good	.....	R. Wishart, Burnfoot Gardens, Langholm.
	Under, good	Under; good	Under; good	Average, good	Under; bad	Under; bad	Average; good	Average; good	Average	John MacKinnon, Terregles.
	Under, bad	Under, bad	Under, bad	Average good	....	.	Over; good	Average; good	... .	John MacDonald, Dryfeholm Gardens, Lockerbie.
KIRKCUDBRIGHTSHIRE	Under; bad	Under, good	Under, bad	Average; good	...	. .	Under; good	Average; good	... .	N. Macfadyen, Glenlee Park Gardens, New Galloway.
	Under; good	Under; good	Average; good	Average; good	Average; very good	...	Over; good	Average; very good	...	Wm. Thomson, Cally Gardens, Gatehouse.
RENFREWSHIRE ..	Under	Under	Under	Average	Under	.....	Average	Average; good	..	John Methven, Blythswood Gardens, Renfrew.

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
6, Scotland, W.										
RENFREWSHIRE ...	Under; bad	Under; bad	Under; bad	Under	... ..	.....	Average; good	Average	.. ..	Thomas Lunt, Ardgowan Gardens, Inverkip.
STIRLINGSHIRE	Under	Under	Under	Under	Average; good	... ..	Over; very good	Over; very good	.....	Alex. Marshall, Ballikinrain Castle Gardens, Balfron Station.
WIGTONSHIRE	Average; good	Under; good	Average; good	Under; bad	.....	. ....	Average; good	Average; good	.....	John Bryden, Dunragit Gardens, Dunragit.
	Under; good	Average; good	Under	Under, bad	Under	Under	Average; good	Average; good	Under	James Day, Galloway House Gardens, Garlieston.
ENGLAND:										
2, England, N.E.										
DURHAM	Under	Under	Average	Under		. ...	Average; good	Under	.....	Robt. Draper, Seaham Hall Gdns., Seaham Harbour.
	Under	Under; bad	Under	Under; bad	. .	Under	Under	Under; bad	.. ..	James Machar, Smelt House Gardens, Howden-le-Wear.
YORKSHIRE	Under	Under	Under	Under	.....	.....	Under	Average	.. ..	J. Simpson, Studfield, near Sheffield.
	Average; good	Under; good	Under; bad	Average; good	Over; good	Over; good	Average; good	Under; bad	Under	J. S. Upex, Wigganthorpe Gardens, York.
	Average	Average	Under	Over	Average	Under	Under	Under	Over	J. Allsop, Dalton Hall Gdns, Dalton Holme, Beverley.
	Average	Under	Under	Under	Under	Average	Under	Over; good	Under	Henry J. Clayton, Grimston Gardens, Tadcaster.
	Average; good	Average	Under; poor	Average; good	Under	Average	Average	Average; good	.....	A. E. Sutton, Castle Howard Gardens, Welburn.
3, England, E.										
CAMBRIDGESHIRE	Average; good	Under; bad	Under; bad	Under; bad	Average; good	Under; good	Average; good	Average; good	Under; bad	R. Alderman, Babraham Hall Gardens, Cambridge.
	Under	Under	Under	Average	Average	Under	Over	Average	Under	T. W. Birkinshaw, Hatley Park Gardens, Sandy.
ESSEX	Average; good	Under; good	Under; good	Over; very good	Over, good	Over; good	Average; very good	Under; very good	Under	A. Bullock, Copped Hall Gardens, Epping.
	Over; good	Average; good	Under	Under	Average	Average; good	Over; good	Average; good	... ..	Henry Lister, Easton Lodge Gardens, Dunmow.
	Average	Under	Under	Under	Under	.... .	Average; good	Under	Under	W. R. Johnston, Stanway Hall Gardens, Colchester.
LINCOLNSHIRE	Average; good	Under	Under	Under	Average	Under	Average; good	Average; good	.. ..	H. Vinden, Harlaxton Manor Gardens, Grantham.
NORFOLK	Under; good	Under; good	Under; good	Under; bad	Average; good	Average; good	Over; very good	Average; good	Under; good	J. Wynne, Sedgeford Hall Gardens, King's Lynn.
	Under	Under; bad	...	Average	Under	Average	Average	Over; very good	Under	J. W. Bradbrook, Kettering-ham Park Gardens, Wy-mondham.
	Under; good	Under	.....	Average; very good	Under; good	Under; very good	Under; good	Under; very good	. .	W. N. Thurston, Witton Park Gardens, North Walsham.
SUFFOLK	Average; good	Under; good	Under; good	Under; good	Average; very good	Under; bad	Over very good	Over; good	Average; good	Thos. Simpson, The Gardens, Henham Hall, Wangford.
	Over; very good	Average; good	Under	Under; bad	Average; good	Average; good	Average; good	Average; good	Under	A. Hickford, Barsham House Gardens, near Saxmund-ham
4, Midland Counties.										
BEDFORDSHIRE	Over; good	Under	.....	... ..	.....	... .	Average	Over; good	Average	H. Nimmo, Cranfield Court Gardens, Woburn Sands, R.S.O.
	Average; good	Under; bad	Under; bad	Average; good	Under; good	Under; good	Average; good	Average; good	Average	H. W. Nutt, Flitwick Gardens,
	Average; good	Under; good	Under; good	Average;	Average; very good	Average	Average	Average; good	Average	George Mackinlay, Wrest Park Gardens, Ampthill
	Over; very good	Average; good	Under	Over; very good	Under	Under	Average; good	Average; very good	Average	Wm. E. Palmer, Freefield Gardens, Woburn.
	Average; good	Average; good	Under; bad	Average; good	Average; good	Under; good	Over; very good	Average; good	.	C. J. Ellett, Chicksands Priory Gardens, Shefford.
BUCKINGHAM-SHIRE ..	Over; very good	Under; bad	Under; bad	Under; good	Under; good	Under; bad	Average; very good	Average; good	Average	James Wood, Hedsor Park Gardens, Bourne End.
	Average; good	Under; good	Under	Under	Average, good	Under	Average; good	Over; good	Under	John Fleming, Wexham Park Gardens, Slough.
	Average; good	Under	Under	Under	Average; good	Under	Average; good	Average; good	Average	Chas. Page, Dropmore Gardens, Maidenhead.
	Under; good	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Average good	W. Hedley Warren, Aston Clinton Gardens, Tring.
	Average; good	Under	Under; bad	Under	Average, good	Under	Average; very good	Average; good	Under	James MacGregor, Mentmore Gardens, Leighton Buzzard.
CHESHIRE	Average; good	Under	Under	Average, good	Under; good	Under	Average	Over; good	Average	Geo. W. Lilley, Moreton Hall Gardens, Congleton.
	Over	Average	Average	Average	.. ..	.....	Over; good	Average	.....	Peter Wilkinson, Walton Lea Gardens, Warrington.
DERBYSHIRE	Average; good	Under . good	Under; bad	Average . good	Under	Under	Average; good	Average; good	... .	J. C. Tallack, Shipley Hall Gardens, Derby.
	Over; good	Under	Under	Under	Under	Under	Over; good	Average; good	.....	Bailey Wadds, 181, Uttoxeter New Road, Derby.
	Over; good	Under	Under	Average; good	.....	Under	Average	Average; good	Under	T. Keetley, Darley Abbey Gardens, Derby.
	Average; good	Average; good	Under; good	Over; good	. ...	.....	Average; good	Over; good	.....	W. Chester, Chatsworth Gardens, near Chesterfield.
	Under; good	Under; bad	Average; good	Average; good	.....	.....	Over; good	Average; very good	... .	F. G. Mills, Glossop Hall Gardens, Glossop.
	Over; good	Under; bad	Under; bad	Average; good	.....	Under; bad	Average; good	Average; good	.....	James Tully, Osmaston Manor Gardens.
HERTFORDSHIRE ...	Average	Under	Under	Under	... ..	. ...	Average good	Average; good	Average	Thomas Hedley, Lane House Gardens, King's Walden, Hitchin.
	Under; good	Under; bad	Under; good	Under; good	Under; good	Under; bad	Average; very good	Over; very good	..	C. R. Fielder, North Mymms Park Gardens, Hatfield
	Average	Under	Under	Over; good	Average; good	Under	Over; very good	Average	Over good	C. E. Martin, The Hoo Gardens, Welwyn.
	Average; good	Under	Under	.....	.. ..	. ...	Average; good	Average	Under	Thos. Rivers and Son, Sawbridgeworth.
	Over; good	Under; good	Under; bad	Average; very good	Under; good	.....	Average; good	Over; very good	Under bad	H. Prime, The Gardens, Hatfield House, Hatfield.
	Under; good	Bad	Under	Under	Bad	Under	Average	Average	Under	F. W. Gooch, The Gardens, Edge Grove, Watford.
	Average; good	Under; bad	Under	Average; good	Average	Average; good	Average; good	Average very good	Under	Ed. Beckett, Aldenham House Gardens, Elstree
	Under	Under	Under; bad	Under	.....	. ...	Average; good	Over; very good	. ...	Arthur Dye, Tring Park Gardens, Tring
	Average; good	Under	.. ...	Average	Average	Under	Under	Average; good	Average	Wm. Whitelaw, Batchwood Gardens, St. Albans
	Very good	Under	Much under	Good	Average; good	Under	Good	Good	Under	Hy. Parr, Trent Park Gardens, New Barnet.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
4. Midland Counties.										
LEICESTERSHIRE ...	Under	Under	Under	Under	... ...	Under	Average; good	Over; very good	... ...	G. Milford, Egerton Lodge Gardens, Melton Mowbray.
	Under; good	Under; bad	Under; good	Average; good	Under; good	Under, bad	Average; good	Under; good	.....	Daniel Roberts, Prestwold Hall Gardens, Loughborough.
	Over; very good	Under; very good	Under; good	Average; good	Under; bad	Average; good	Average; very good	Over; very good	Hazelnuts good	W. H. Divers, Belvoir Castle Gardens, Grantham.
	Under	Under	Under	Under	.....	.....	Average; good	Average; good	... ..	W. Wadsworth, Barkly Lane, Queensborough.
	Under; good	Under; good	Under; good	Average	Average	Under	Average; good	Average; good	Under	F. Ibbotson, Rolleston Hall, Billesdon, Leicester.
NORTHAMPTONSHIRE	Under; good	Under; good	Under; good	Over	Under; good	Over; very good	Average; very good	Under; bad	Average	Robert Johnston, Wakefield Lodge Gardens, Stony Stratford.
	Under; good	Under; good	Under; bad	Under; good	Under; good	Under; good	Over; very good	Over; very good	Over; good	H. Turner, Fineshade Abbey Gardens, Stamford.
	Average	Under	Under	Average	Under	Under	Average; over	Under	Under	John Blayson, Cotterstock Hall Gardens, Oundle.
NOTTINGHAMSHIRE	Under; good	Under; good	Under; good	Average; good	Under; good	Under; good	Average; very good	Average; good	Under; good	Amos Parr, Holme Pierrepont Hall Gardens, Nottingham.
	Average; very good	Under; good	Bad	Under; good	Under; bad	Over; good (protected)	Average; very good	Average; very good	Under; bad	James Gibson, Welbeck Gardens, Worksop.
	Average	Under	Under; bad	Under; bad	.....	.....	Average; good	Under; bad	.....	John Snell, Edwinstowe Hall Gardens, Newark.
	Under	Much under	Complete failure	... ..	Under	Under	Average	Under	Average	J. R. Pearson and Sons, Chilwell Nurseries, Lowdham.
	Average	Under	Under; bad	Average; good	.....	Under	Average	Average; good	.....	A. W. Culloch, Estate Office, Newstead Abbey.
OXFORDSHIRE	Average; good	Under	.....	Average	Average	...—	Average; good	Average; good	Good	John A. Hall, Shiplake Court Gardens, Henley-on-Thames
	Average; good	Under	Under; good	Average; good	Under	Under	Over; good	Over; good	Average	A. J. Long, Wyfold Court Gardens, Reading.
	Average; good	Under; bad	Under; poor	Average	Average; good	Under; good	Over; very good	Average; good	Average	J. Broadfoot, Shotover Gardens, Wheatley.
SHROPSHIRE	Average; good	Under	Under	Under	Under	Under	Under; bad	Average; good	Under	A. S. Kemp, Broadway, Shifnal.
	Under; very good	Under; good	Under; good	Under; good	Under; good	Under, good	Under; bad	Average; good	Under	James Louden, The Quinta, Chirk.
	Under	Under	Under	Under	Average	Under	Under	Average	... ...	C. Robinson, Pitchford Hall Gardens, Shrewsbury.
STAFFORDSHIRE ...	Average; good	Average; good	Under, bad	Average; good	.....	Under, bad	Under; very good	Average; very good	Under	T. Bannerman, Blithfield Gardens, Rugeley.
	Average; good	Under	.. ...	Average, good	.. ..	.....	Under	Average	Under	C. A. Bayford, Shugborough Gardens, Stafford.
	Over	Under	Under	Average	.. ...	Under	Average	Average	Average	G. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.
WARWICKSHIRE ...	Under; good	Almost none	.....	Average	.....	... —	Plentiful; good	Plentiful; good	Plentiful	W. Miller, Berkswell, North Warwickshire.
	Average	Under	Under	Under	Average	Under	Over	Under	Under	Thos. Masters, Estate Office, Shuckburgh, Daventry.
5. Southern Counties.										
BERKSHIRE	Average; good	Under	Under	Average; good	Under; good	Under	Under, good	Over; very good	Average; good	Geoffrey Cooper, Oakley Court Gardens, Windsor.
	Under; bad	Under; bad	Under	Average	Under; bad	Under	Average	Average	Average	J. Howard, Benham Park Gardens, Newbury.
	Under	Under	Under	Under	Under	Under	Average	Average	Under	William Fyfe, Lockinge Gardens, Wantage.
	Average	Under	Under	Under	Average	Average	Average, good	Over; good	... ..	James Coombes, Englefield Gardens, near Reading.
DORSETSHIRE	Average; good	Average; good	Average; good	Under; bad	Under; bad	.....	Over; very good	Average; very good	Under	H. Bukinshaw, Chedington Court Gardens, Crewkerne.
	Average; good	Under, bad	Under; bad	Under	Average; good	Under	Under, good	Average	Under	T. Turton, Castle Gardens, Sherborne.
	Average; good	Average; good	Under	Under; bad	.. ...	Under	Average; good	Over; very good	Under	Thos. Denny, Down House Gardens, Blandford.
	Average; good	Under, good	Under	Under; bad	Under; good	Under; bad	Average	Average; very good	Under	Ben Campbell, Kingston House Gardens, Dorchester.
HAMPSHIRE	Average; very good	Under; very good	Under	Average	Under; very bad	Under; very bad	Average; good	Average; very good	Average	Arthur Lee, Palace House Gardens, Beaulieu, Brockenhurst.
	Over; very good	Average; good	Average; good	Over; good	Under	.....	Over; good	Average; good	Average	Edwin Molyneux, Swanmore Park, Bishop's Waltham.
	Average; very good	Under	Under	Under	.....	Under	Average	Average; good	Average; good	A. G. Nichols, Strathfieldsaye Gdns., Mortimer, R.S.O.
	Average	Under; bad	Under; bad	Under	.....	Under; bad	Under	Over; very good	Average	James Wasley, Sherfield Manor Gdens., Basingstoke.
KENT	Average	Under	Under	Under	Under	... ..	Average; good	Average; very good	.....	Fredk. Sparks, Walmer Place, Walmer.
	Average; good	Under; bad	Under; bad	Average, good	Under; bad	Under; bad	Average; good	Average, good	Under; good	H. J. Knight, Preston Hall Gardens, Aylesford.
	Average; good	Under; good	Under, good	Average, good	Under; good	.....	Average; good	Average; good	Under; good	George Woodward, Barham Court Estate Gardens, Teston.
	Over; good	Under	.....	Under	Under	Under	Average; good	Over; good	Average	George Bunyard, Royal Nurseries, Maidstone.
	Average	Under	Under	Under	Under	.....	Over	Average	Under	Alfred O. Walker, F.L.S., Ulcombe Place, near Maidstone.
	Over; very good	Under, good	Much under	Under	Much under	.....	Over	Average; good	Under; good	Wm. Lewis, East Sutton Park Gardens, Maidstone.
	Over	.. ...	.....	Average	... ..	... ..	Average	Average; good	Under	Geo. Fennell, Bowden, Hadlow Road, Tonbridge.
	Average; good	Under; bad	Under; good	Under; good	... ..	.....	Average	Under; good	Under; good	B. Champion, Mereworth.
	Under	Under	Bad	Average	.....	.....	Average	Average	Under	George Lockyer, Mereworth, Maidstone.
	Average; very good	Under; good	Under; bad	Average; good	Under; very bad	Under; good	Under; good	Average; very good	.....	W. G. Humphreys, The Gardens, Blendon Hall, Bexley, Kent.
	Average; good	Average; good	.....	Morellos average	Under	Under	Over	Average	.....	W. Dixon, The Old House Gardens, Walmer.
	Under, bad	Under; bad	Under; bad	Average; good	Average; good	Under; bad	Over; very good	Over; very good	Under; bad	W. J. Sims, Betteshanger Gardens, Eastry.
MIDDLESEX	Average; good	Under; bad	Under; bad	Under; bad	Under; bad	Under; good	Over; good	Over; very good	Walnuts; under	Geo. Wythes, Syon House Gardens, Brentford, W.
	Over; good	Under	Average; good	Average; good	Over; good	Under	Average; good	Average; good	Under	H. Markham, Wrotham Park Gardens, Barnet.
	Average; good	Under; good	.....	Average; very good	Under; good	.....	Average	Under	... ..	James Hudson, Gunnersbury House Gardens, Acton, W.
	Under, good	Under	.....	Much under	Under	Under	Average	Average	Average	W. Watson, Harefield Place Gardens, Uxbridge.
	Average, good	Under	Under; bad	Average	Under	Under	Average	Under	.. ...	W. Bates, Cross Deep Gardens, Twickenham.
	Average	Average, very good	Under	.....	Average; good	... ..	Average; good	Average very good	Under	James Hawkes, Osterley Park Gardens, Isleworth.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
SURREY	Under	.....	.....	... ...	.....	.....	Under	Average; good	Average	William Bain, Burford Gardens, Dorking.
	Under	Under	Under	Under	.....	.....	Average	Average	Over	S. F. Wright, R.H.S. Gardens, Wisley, Ripley.
	Over; good	Under; good	Under; good	Average; good	.....	Under; good	Over; very good	Over; very good	Average; good	W. P. Bound, Gatton Park Gardens, Reigate.
	Over; good	Under; good	Under; good	Over; very good	Average; good	Average; good	Average; good	Over; good	Average good	G. J. Hunt, Ashstead Park Gardens, Epsom.
	Over (marvellous crop)	Under (very small crop)	Under (practically none)	.....	... ...	... ...	Average	Over; very good	.....	W. Wilks (Rev.), Shirley Vicarage, Croydon.
	Over; good	Under	Under	Average	Average	Under	Average	Average	Under	W. Honess, Cobham Park Gardens, Cobham.
	Average	Under	.....	Average	.....	.....	Average	Under	.....	C. J. Salter, Woodhatch Lodge Gardens, Reigate.
	Average; good	Much under	Much under	Average	Under	Under	Average; good	Average; good	.....	Alexander Dean, 62, Richmond Road, Kingston-on-Thames.
	Over; good	Under	Under	Average; good	Under	Under	Average; good	Average	Under	Geo. Kent, Norbury Park Gardens, Dorking.
	Average; very good	Under; good	Under	.....	.....	... ..	Average; good	Average; good	.....	Geo. Halsey, Riddings Court Gardens, Caterham.
SUSSEX	Over	Average; good	Under; bad	Average	Average	Average; bad	Over; good	Average; good	Under; bad	A. Wilson, Eridge Castle Gardens, Tunbridge Wells.
	Over; good	Under; good	Under	Average; good	Average; good	..	Average	Average; good	Under	Alex. Reid, Possingworth Gardens, Crossin Hand.
	Under; bad	Under; good	Under; bad	Under; bad	Under; bad	.....	Average; good	Average; good	.....	W. H. Smith, West Dean Park Gardens, Chichester.
	Average; good	Under; very good	Under; good	Average; good	Average, very good	.....	Average; very good	Average; good	Average	Wm. Brunsdea, Bramdytye Gardens, East Grinstead.
	Average; bad	Under; bad	Under; bad	Under; good	Average; good	Under; bad	Average; good	Average; good	Under; bad	Geo. Grigg, Ashburnham Place Gardens, Battle
	Over; very good	Under; good	Under; good	Under	Under; bad	.....	Over; very good	Under; good	Under	W. Langridge, Ote Hall Gardens, Burgess Hill.
	Average; good	Average; good	Under; bad	Under; bad	Average, good	... ..	Average; good	Average good	.....	C. Allen, Worth Park Gardens, Crawley.
	Over	Under; good	Under	Under; good	Average good	.....	Over good	Average, good	Average, good	W. A. Cook, Leonardslee Gardens, Horsham.
	Average	Average	Under; bad	Under; bad	Under, bad	Under; bad	Average	Average	Under; bad	H. C. Prinsep, Buxted Park Gardens, Uckfield.
	Average; good	Under	Under	Under; good	Under	.....	Average, good	Over	Under	E. Burbury, Castle Gardens, Arundel.
WILTSHIRE	Under; good	Under; good	Under; bad	Under; bad	Under; good	... ..	Average; good	Over; good	Average good	John Bannerman, Lackham Gardens, Lacock.
	Average	Under	.....	Average	Under	Under	Average	Average	Under	Thomas Challis, Wilton House Gardens, near Salisbury.
	Average; good	Average; good	Average; good	Over; very good	Under, good	Under; good	Average; very good	Over; very good	... ..	George Brown, Bowood Gardens, Calne
	Under; good	Under, bad	Under; bad	Under; bad	Under; good	Under; bad	Average, good	Under	Average good	W. Tinley, Malmesbury.
7, England, N.W.										
CUMBERLAND	Under; good	Under; good	Under; good	Average; very good	.....	Average; good	Over; very good	Over; good	... ..	William Scott, Eden Hall Gardens, Langwathby, R.S.O.
	Over	Under	Under	Average; good	Average	Average	Over good	Average, very good	Under	Thomas Tunstall, Carleton Hill, Penrith.
	Under	Under	Under	Under	. ....	... ..	Over; good	Over; good	.	Backhouse Gowan, Castle Gardens, Whitehaven
LANCASHIRE	Under; good	Under; good	Under; good	Under; good	... ..	.....	Average; good	Average; good	....	Wm. P. Roberts, Cuerden Hall Gardens, Preston
	Under	Under	Under	Average	.....	... ..	Over; good	Over; good	.....	E. F. Hazelton, Knowsley Gardens, Prescot
	Under	Under	Under	Under	.....	... ..	Average	Average	.....	Wm. Ashton, Wrightington Hall Gardens, Wigan.
	Average; very good	Under; good	Under; bad	Average; good	... ..	... ..	Over	Average; very good	... ..	Benjamin Cromwell, The Gardens, Cleveley Allerton Liverpool.
	Average; very good	Under	Under	Under	.....	.....	Average; good	Average; very good	Average	Thomas Wyton, The Gardens, Abbeystead, Lancaster.
	Over; very good	Under; good	Under; bad	Morellos; good	Average; very good	.....	Over; good	Average; very good	Average	Ben. Ashton, Lathom House Gardens, Ormskirk
	Under; bad	Under; bad	Under; bad	Average; good	.....	.....	Over; very good	.....	Under; good	G. H. Lansley, Witherslack Hall Gardens, Grange over-Sands.
WESTMORLAND	Under	Under; bad	Under; bad	Under; good	.....	Under; bad	Under; good	Average, very good	... ..	F. Clarke, Lowther Castle Gardens, Penrith.
	Under	Under	Under	Under	.....	.....	Under	Average	Under	W. A. Miller, Underley Gardens, Kirkby Lonsdale.
	Under; good	Under; good	Average; good	Average; good	Average; good	.....	Average; good	Average; good	Under	W. Gibson, Levens Hall Gardens, Milnthorpe.
	Average; good	Under	Under; very bad	Over; good	.....	Average; good	Over; very good	Average; good	.....	J. Coupland, Brougham Hall Gardens, Penrith.
8, England, S.W.										
CORNWALL	Under	Over	Under	Under	Average	.....	Under	Average	.....	A. Mitchell, Tehidy Park, Camborne.
	Average; good	Average; good	Under; good	Average; good	Under; good	.....	Over; very good	Average; very good	.....	Alfred S. Read, Port Eliot, St. Germans, R.S.O.
	Under	Over	Under	Under	Under	.....	Over	Under	.....	Wm. Sangwin, Trelissick Gardens, Truro.
	Average; good	Average; good	Over; good	Average; good	Average; good	.....	Over; very good	Over; very good	... ..	W. H. Bennett, Menabilly Par Station
DEVONSHIRE	Average; good	Over; good	Average; good	Average; very good	Average; good	Under	Over; good	Average; good	Average	Andrew Hope, 35, Prospect Park, Exeter
	Average; over	Average; fair	Under	Under; bad	Under; good	.....	Average; good	Over; very good	... ..	Geo. Baker, Membland Gardens, Newton Ferrers, Plymouth.
	Average	Average	Average	Under	Under	Under	Average	Average	Average	James Mayne, Bicton Gardens, East Budleigh
	Average; good	Average	Under	Under	Under	Under	Average; good	Average; very good	.....	G. Foster, Dawlish Road Gardens, Teignmouth.
	Under	Over; good	Under	Over; good	Average	.....	Over; good	Under; poor	Over; good	F. H. Slade, Poltimore Gardens, Exeter.
	Average; good	Under; good	Under; good	Under; bad	Average, good	.....	Average; good	Under; good	Under; bad	F. Seward, Saltram Gardens, Plympton.
GLOUCESTERSHIRE	Average	Under	Under	Under	Under	Under	Under	Over; very good	Average	William Keen, Bowden Hall Gardens, Gloucester
	Average; good	Under; good	.....	Under	Under; good	Under	Average	Average; good	Under	John Banting, Dartworth Gardens, Falfield
	Average	Under	Under	Under	Average	Under	Average	Average; good	Average	W. H. Berry, Highnam Court Gardens, Gloucester
	Average over	Under; good	Under	Under	Under	Average; good	Average; good	Over, good	Average	Wm. Nash, Badminton Gardens, Chippenham

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
8, England, S.W.										
GLOUCESTERSHIRE	Average; good	Average; good	Under; bad	Under; good	Average; good	Under; good	Over; very good	Average; good	.....	Wm. Daffurn, Elmstree House Gardens, Tetbury.
	Average	Under	Under	Under	.....	.....	Average	Average	Under	G. Kettringham, Eyford Park Gardens, Moreton-in-Marsh
	Over; very good	Under; good	.....	Under; good	Average; good	Average; good	Under	Average; very good	.....	F. C. Walton, Stanley Park Gardens, Stroud.
	Over; good	Under	Under	Average	Average	Average	Average; good	Under	Under	A. Chapman, Westonbirt House Gardens, Tetbury.
	Average; good	Under	Under; none	Under; bad	Under	Under	Under; very good	Average; good	Over; very good	A. E. T. Rogers, Sudeley Castle Gardens, Winchcombe.
HEREFORDSHIRE ..	Over; good	Under; good	.....	Under	.....	.....	Under	Average; good	Average	Thos Spencer, Goodrich Court Gardens, Ross.
	Average; good	Under; good	Under	Average; very good	Under; very good	Under	Under	Average good	Average; good	George Mullins, Eastnor Castle Gardens, Ledbury.
	Under	Under	.....	Under	.....	.....	Under	Average; very good	.....	C. Smith, Barton Court Gardens, Colwall, Malvern.
MONMOUTHSHIRE	Average; good	Average; good	Under; good	Under	Under	Under; good	Over; very good	Over; very good	Average	W. F. Wood, Llanfrechfa Grange Gardens, Caerleon.
	Average; good	Under	Under; bad	Average	Average	Under; bad	Average; good	Under	Average	John Lockyer, Park Gardens, Pontypool.
	Average; good	Under; good	Under	Under	Average; good	Under; good	Average; good	Average; good	Average	Thos. Coomber, The Hendre Gardens, Monmouth.
	Average; bad	Average; good	Much under	Much under	Under	Under	Average; good	Under; bad	Average	J. Basham, Fair Oak Nurseries, Bassaleg, near Newport.
SOMERSETSHIRE ...	Under	Under; bad	Under; bad	Under	Average	Average	Average; good	Average; good	Average	William Hallett, Cossington, Bridgwater.
	Average; very good	Under; good	Under; good	Under; good	.....	Under; very good	Over; good	Average; good	.....	John Crook, Forde Abbey Gardens, Chard.
	Over; very good	Average	Under	Under	Over	Over; very good	Over	Over	Over	Samuel Kidley, Chipley Park Gardens, Wellington.
WORCESTERSHIRE	Average	Under	Under	Under	Under	Under	Under	Average	Average	A. Young, Witley Court Gardens, Stourport.
	Under	Under	Under	Morellos Average	.....	Under	Under	Over; very good	.....	A. Pettigrew, Hewell Grange Gardens, Redditch.
	Average; good	Under; bad	Under; bad	Under; bad	Average: good	Average; good	Under; good	Over; good	Average; good	William Crump, Madresfield Court Gardens, Malvern.
WALES:										
CARMARTHENSHIRE	Under; good	Average; very good	Under; good	Average; good	Under; bad	.....	Average; good	Over; very good	Good	William Parker, Neuaddfawr Gardens, Llandovery.
CARNARVONSHIRE	Under	Under	Under	Under	.....	.....	Average; very good	Average; good	.....	H. Weaver, Vaynol Park Gardens, Bangor.
	Under; bad	Under	Under	Under	.....	.....	Average; very good	Average; good	Under	T. Evans, Gwydyr Castle Gardens, Llanrwst.
	Under; bad	Under, bad	Under; bad	Under; bad	Under; bad	Under; bad	Over; very good	Under; bad	.....	Walter Speed, Penrhyn Castle Gardens, Bangor.
DENBIGHSHIRE .	Average	Under; bad	.....	.....	Average	Over; good	Under	Average; good	Under	Walter Weir, Rhosnessney, Wrexham.
FLINTSHIRE	Bad	Bad	Bad	Average	Bad	Under	Average	Good	Under	John Forsyth, Hawarden Castle Gardens, Chester.
GLAMORGANSHIRE	Over; very good	Under; good	Under, bad	Average; good	Average; very good	Under, good	Over; very good	Over	Over	R. Milner, Margam Park Gardens, Port Talbot.
	Under; bad	Under, good	Under; good	Average; good	Average; very good	Under; good	Under; bad	Average; bad	.....	Hugh A. Pettigrew, St. Fagan's Castle Gardens, nr. Cardiff.
MERIONETHSHIRE	Average; good	Under; bad	Under; bad	Under; bad	.....	.....	Average, good	Average; good	.....	J. S. Higgins, Rhûg Gardens, Corwen.
MONTGOMERYSHIRE	Under; good	Under; good	Under; bad	Average; good	Under; bad	Under; bad	Under; bad	Average; good	Average; good	John Lambert, Powis Castle Gardens, Welshpool.
PEMBROKESHIRE .	Under; bad	Average	Under	Over	Average	.....	Under	Over	Over	Geo. Griffin, Slebech Park Gardens, Haverfordwest.
IRELAND:										
9, Ireland, N.										
ANTRIM	Under; good	Under	Under	Under; bad	Under; bad	Average	Average; good	Over; good	Average	J. MacLean, The Gardens, Shanes Castle.
ARMAGH	Under, bad	.....	.....	.....	.....	.....	Average	Average	.....	A. D. Preston, Loughgall
CAVAN	Under; very good	Average; good	Under; good	Under	.....	.....	Over; very good	Over; very good	Average	Wm. Berry, The Gardens, Farnham.
DUBLIN	Average	Under	Under	Average; good	Average	Over	Under; good	Average; good	Average	A. Campbell, St. Anne's Gardens, Clontarf.
GALWAY	Average; good	Under; bad	Under; bad	Under, good	.....	.....	Average; very good	Under; good	.....	Andrew Porter, Woodlawn Gardens.
	Over; good	Under; good	Average	Average	.....	.....	Over; very good	Average; good	Under	Thomas Dunne, Lough Cutra Castle Gardens, Gort.
MAYO	Under; bad	Under; good	Under; good	Average; good	Under; good	.....	Average; very good	Under; good	Under; very good	Patrick Connolly, Cranmore Gardens, Ballinrobe.
MEATH	Under	Under	.....	.....	.....	.....	Average	Under; bad	.....	Michael McKeown, Fruit Grower, Julianstown, Drogheda.
TYRONE	Over; very good	Under	Under	Under	.....	.....	Average; good	Over; good	.....	Fred. W. Walker, Sion House Gardens, Sion Mills.
WEST MEATH	Over; good	Under; bad	Under; good	Average; good	.....	Under; very good	Average; good	Average; good	Under; bad	George Bogie, The Gardens, Pakenham Hall, Castle Pollard.
WICKLOW	Under	Under	Bad	Under	.....	Bad	Average; good	Average; good	Average; good	William Owen, Powerscourt Gardens, Enniskerry.
	Average; good	Average	Average	.....	Over; very good	Average	Average; good	Average; good	.....	D. Brough, Coollattin, Shillelagh.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
10, Ireland, S.										
CARLOW	Over; very good	Under; average	Average	Average	Under	Under; bad	Average; very good	Average; very good	Average; very good	F. R. Browne, The Gardens, Borris House, Borris.
CLARE	Over; very good	Under, bad	Average, good	Under; good	.....	.....	Average; very good	Over; very good	Under, good	Alfred Barker, Carrigoran, Newmarket-on-Fergus.
	Average	Under	Average	.....	.....	.....	Over	Under	Under	William Clarke, Castle Otto Gardens, Simmilebridge.
CORK	Average; good	Average; good	Under; good	Under; bad	Under; bad	Under; good	Average; very good	Average; very good	.....	C. Price, Michelstown Castle Gardens.
KILDARE	Under	Under	Under	Under	.....	Under	Over; good	Average	.....	Frederick Bedford, Straffan House Gardens, Straffan Station.
	Average	Average	Under	Under	Under	Average	Over	Average	Average	A. Black, Carton, Maynooth.
KILKENNY	Average; very good	Average; good	Under, good	Average; very good	.....	Under; good	Average; very good	Over; very good	Average	F. France, The Gardens, Bessborough Park, Piltown.
ROSCOMMON	Under	Under	Under	Average	Under	.....	Average; good	Average	.....	Terence Rogers, Frenchpark House Gardens, Frenchpark.
TIPPERARY	Over; very good	Under, bad	Under, bad	Average; good	Under, bad	Under; bad	Over, very good	Average; good	.....	John Doolan, The Gardens, Minella, Clonmel.
WATERFORD	Over; very good	Over; very good	Under; good	Average; good	Average; very good	.....	Over; very good	Average; good	.....	Thomas Dunn, Stranoally Castle Gardens, Tallow.
CHANNEL ISLANDS:										
GUERNSEY	Under; good	Over; very good	Under	Average; good	Under	Under	Average	Average; very good	.....	C. Smith and Son, Caledonia Nursery.
JERSEY	Under; good	Over; very good	Under; good	Average; good	.....	.....	Over; very good	Over; very good	.....	Robert Reid, Spring Grove, St. Lawrence.
ISLE-OF-MAN:										
	Average, good	Under	Under	Average, good	.....	.....	Average; good	Over, good	.....	James Inglis, The Nurseries, Brunswick Road, Douglas.

SUMMARY FOR COUNTIES.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches.	Apricots.	Small Fruits.	Strawberries.	Nuts.
SCOTLAND.									
Number of Records	(50)	(47)	(44)	(38)	(20)	(20)	(50)	(50)	(7)
Average	9	4	5	5	14	7	30	38	3
Over	2	0	0	0	1	1	7	8	0
Under	39	43	39	33	5	12	13	4	4
ENGLAND.									
Number of Records	(167)	(167)	(151)	160	(122)	(103)	(167)	(167)	(105)
Average	90	25	10	64	50	20	101	105	49
Over	30	4	1	11	4	5	38	37	8
Under	47	138	140	85	68	81	28	25	48
WALES.									
Number of Records	(11)	(11)	(10)	(10)	(8)	(6)	(11)	(11)	(7)
Average	2	2	0	5	4	0	5	8	2
Over	1	0	0	1	0	1	2	2	2
Under	8	9	10	4	4	5	4	1	3
IRELAND.									
Number of Records	(22)	(21)	(20)	(18)	(10)	(11)	(22)	(22)	(12)
Average	7	5	5	9	2	3	14	13	7
Over	7	1	0	0	1	1	7	5	0
Under	8	15	15	9	7	7	1	4	5
CHANNEL ISLANDS.									
Number of Records	(3)	(3)	(3)	(3)	(1)	(1)	(3)	(3)	(0)
Average	1	0	0	3	0	0	2	1	0
Over	0	2	0	0	0	0	1	2	0
Under	2	1	3	0	1	1	0	0	0

GRAND SUMMARY.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(253)	(249)	(228)	(229)	(161)	(147)	(253)	(253)	(131)
Average	109	36	20	81	70	30	152	165	61
Over	40	7	1	12	6	8	55	54	10
Under	104	206	207	136	85	109	46	34	60

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	July 30	R.H.S. Conversazione in Vincent Square Hall, 9 p.m.
TUESDAY,	July 31	Roy. Hort. Soc. Coms. meet. Opening of International Conference on Plant Breeding in R.H.S. Hall, 10.30 a.m. Dinner at the Hort. Club, 6.30 p.m.
WEDNESDAY,	Aug. 1	Continuation of Conference in the morning and visit to Burford Gardens in the afternoon.
THURSDAY,	Aug. 2	Closing day of Roy. Hort. Soc. Conference. Banquet in the Roy. Hort. Soc. Hall, at 6.30 p.m.
FRIDAY,	Aug. 3	Visit of Conference guests and others to Gunnersbury House Gardens, Acton.

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

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, July* 25 (6 P.M.): Max. 74°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, July* 26 (10 A.M.): Bar., 30.0; Temp., 72°; *Weather*—Fine.

PROVINCES.—*Wednesday, July* 25 (6 P.M.): Max. 68° Eastern Counties; Min. 54° Orkneys.

SALES.

TUESDAY—
Freehold Properties comprising Modern Farm Building, Freehold Cottages, Pasture, Meadow Grazing, and Woodland, at Fambridge-on-Couch, by Protheroe & Morris, at 2.

FRIDAY—
Orchids in variety, at 12.45. L. Harnisii, Roman Hyacinths, Narcissus, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 3.

SATURDAY—
Freehold Horticultural Property, Mount Pleasant Nursery, Hailsham, Sussex, at Gildredge Hotel, Eastbourne, by Protheroe & Morris, at 4.

Our Fruit Crops.

By the courtesy of our correspondents in all parts of the British Isles we are enabled to lay before our readers a tabular statement which will enable them to form a generally accurate notion of the condition and prospects of the fruit crops for the present year. Those who require a detailed account will find it on p. 64 and subsequent pages. For others the tabular summaries will probably suffice. The general result is bad, perhaps not quite so much as we had feared, for Apples yield something approaching to half a crop, and in as many as forty cases they are recorded as above the average. Scotland and Wales come out very badly as regards this the most important fruit-crop of the year, but England has been more favoured. This is especially noticeable in Devonshire, which county has a similar record as regards Pears, which, although unusually deficient in most counties, are better represented in Devon. Plums are almost a total failure everywhere. "Small fruits" are not specified individually in the table, but collectively the record is not a bad one, though many correspondents state that Raspberries have done well, whilst Gooseberries have not maintained their usual reputation. Strawberries, in spite of the injury inflicted on the early blossoms, have not done badly on the whole, for the Strawberry provides a succession of flower-buds, so that if the earliest get injured the latest ones escape unscathed. Some remarks on this subject will be found on another page (page 72), to which we direct the attention of the reader.

An unusual number of forms has been returned to us too late to enable us to avail ourselves of them on this occasion, but it is believed that these omissions would not materially affect the general averages. We may have an opportunity in subsequent issues of making use of the information obligingly supplied by our correspondents.

There can be no doubt that in this year the calamity is attributable in the main throughout the whole country to the inclement weather during the flowering season, as indeed it generally is, but there is work for our meteorologists to determine the connection between the autumn climate of last year and its effect on the maturation of the wood and the development of the flower-buds, as well as to indicate the relations between the spring weather and the condition of the flowers at the period of expansion. Some of our Devonshire correspondents might be able to explain the relative immunity of the Apple and Pear crops in that county from the general disaster.

Some of our Belgian colleagues, we see, have been inveighing against the stupidity (*bêtise*) of plants, which never learn by experience, but which year by year seem unable to adapt themselves to circumstances and become more or less the victims of unpropitious circumstances.

It is very nice to have something upon which to cast the blame, but is it certain that we hybridists and cultivators are not as much or more in fault than the so-styled stupid fruit trees? The raising of late-flowering varieties and the selection of sheltered localities are certainly not entirely outside our capabilities.

To look at the matter from another point of view, has not the consumer, at any rate, the right to rejoice that the deficiencies of the home crops can be and are so fully compensated for, not only by foreign importations, but also by the vast quantities sent us from our own kith and kin across the oceans?

In sending out the fruit-forms we availed ourselves of the opportunity of obtaining the opinions of our correspondents on the important subject of summer pruning. In a subsequent number we shall summarise the information so obligingly communicated, but we may here remark in passing that the answers show that there is considerable difference of opinion as to the value of the results obtained from the practice, just as there is divergence of practice in the time and method of carrying out the operation. The results are described by some correspondents as "indifferent" and by others as "most satisfactory." It appears that the system is most popular in early districts, and least beneficial in cold, late localities where the soil and climate are adverse. So far as we have yet studied the replies they confirm our opinion that in many instances in which summer pruning has proved unsatisfactory the operation has been carried out too early in the season and has therefore been followed by secondary growths which are extremely undesirable.

OUR SUPPLEMENTARY ILLUSTRATION.—There is no more effective waterside plant than Lythrum Salicaria, the spiked Lythrum or Purple Loosestrife, which grows wild in this country in wet ditches and marshy places, and flowers freely and continuously in summer. There are garden varieties of it with colours of a more pleasing shade, but the wild type is quite showy enough to be worth a rod or so of ground wherever there is water. It grows from 4 to 6 feet in height and is easily multiplied by division or cuttings. Lakes, ponds, streams, and riversides might easily be made much more charming than they generally are if only such plants as the Loosestrife, Flag, Yellow Iris, Rodgersia, Globe Flower, Primula japonica, Iris lævigata, and I. ensata, Caltha, Arundo conspicua and A. Donax, Osmunda, and other Ferns were utilised for such positions; the plants would be at home and they would beautify their surroundings. This kind of gardening is possible only where rats and water-fowl are kept in check. At Kew, writes a correspondent, numbers of visitors appear to find more pleasure in gazing at a peacock's tail or the movements of geese and ducks than in plants, consequently there are more birds than is good for waterside gardening; but in private places this difficulty would not arise. What a lovely garden might be made with the hosts of plants that grow best in or within easy root-reach of water, and yet, so far as we know, no such garden has yet been attempted. The lake at Kew would be an ideal spot for a water garden if only the geese, &c., could be sent to the Zoo! After all, there is as much reason for keeping herds of deer, goats, &c., in the garden as there is for keeping destructive birds. A few monkeys, parrots, and perhaps a tiger would be equally appropriate in the Palm-house, at any rate the crowds would prefer them to the plants.

DR. AUGUSTINE HENRY left Liverpool on the 25th inst. for British Colombia, Oregon, &c. His object is to study some of the interesting trees in that country, which are of so much importance from the point of view of practical forestry.

FLOWERS IN SEASON.—CARPENTERIA. Mr. KINGSMILL, of Harrow Weald, kindly sends us a specimen of this shrub, with large finely developed flowers. The plant has been growing outside and unprotected for the last eighteen years, and is now a large shrub.

THE MIDLAND CARNATION AND PICOTEE SOCIETY.—We may remind our readers that the Midland Carnation and Picotee Society's show will be held at the Botanical Gardens, Edgbaston, Birmingham, on Wednesday and Thursday next, August 1 and 2. Particulars can be obtained from Mr. T. HUMPHREYS, hon. secretary and treasurer, at the address already mentioned.

NURSERYMAN AS JUSTICE OF THE PEACE.—Mr. T. G. BAKER, head of the firm of Messrs. BAKER'S, Nurserymen and Seedsmen, Wolverhampton and Codsall, has just been appointed to the Commission of the Peace for the borough of Wolverhampton. Mr. BAKER was for many years head of the firm of JAMES BAKER & SONS, Ltd., boot manufacturers, but some years ago severed his connection with the boot trade and established a first-class nursery at Codsall, and florist and seed shops in Wolverhampton. Mr. BAKER is also an honorary member of the British Gardeners' Association.

NATIONAL POTATO SOCIETY.—Mr. WALTER P. WRIGHT having been appointed Horticultural Superintendent at the South-Eastern Agricultural College, Wye, Kent, has resigned his position as secretary to the above Society. The College will gain what the Society will lose. Mr. W. H. ADSETT replaces Mr. WRIGHT as secretary, and Mr. FOSTER, of University College, Reading, is the treasurer.

FRUIT SALES IN AUSTRIA.—A very useful work is carried out in Austria during the fruit season with regard to the selling and buying of fruit by the Fruit Cultivators' Society, which distributes, free of cost, all over the empire, the current prices of fruit, and replies to all matters concerning the fruit trade as well as negotiates sales. At the present time large quantities of Cherries are being offered for sale by the Fruit Sales Agency, whose offices are at Kornenburg, Vienna. Why have we nothing similar on this side of the Channel?

THE LATE COUNT DE KERCHOVE.—As was to be expected, the Council of the Royal Agricultural and Botanical Society of Ghent is taking steps to perpetuate the memory of their late zealous and enlightened president, and is invoking the aid of those who have been in the habit of taking part in the "Ghent Quinquennials." We shall probably be in a position to give more explicit particulars later on. In the meantime we are sure the movement will have the earnest sympathy of all those who were brought into relation with the deceased president.

THE DEPARTMENT OF AGRICULTURE OF THE MALAY STATES.—We note the publication, by Mr. J. B. CARRUTHERS, of the first Report of the Department of Agriculture of the Federated Malay States. As this department, says Mr. CARRUTHERS, was only initiated in June, 1905, this report must necessarily be of a more prophetic than historical character. Some useful work, however, has been done, and preparations made for future work when the department is fully equipped. Its functions are:—"1. The study of various physiological and pathological botanical questions bearing on the economic plants of the Malay States. 2. The care of the health of all cultivated plants, and constant watch for the earliest signs of any disease, that steps may be at once taken to eradicate it. 3. The carrying on of experiments in agriculture and horticulture. 4. The introduction and trial of new economic plants suitable for profitable cultivation, and the distribution of seeds and plants of these to those wishing to begin the cultivation. 5. The giving of advice and information on agricultural, botanical, and horticultural questions."

ELECTRICITY AS APPLIED TO AGRICULTURE.—Readers may remember the article we published in the early spring describing the experiments being carried out at Bevington, near Evesham, in regard to the use of electricity in growing corn-crops, and it may interest them considerably to know how it is progressing. Mr J. E. NEWMAN, the engineer in charge, states that unfortunately some portions of the apparatus was delivered late, and temporary arrangements had to be made; consequently, breakdowns occurred, and instead of working eight or ten hours a day, the average between March 16 and May was only four. Various troubles incidental to all experimental work occurred, so if under the circumstances an increase in the yield can be recorded, there bids fair to be an excellent result another season when everything is "ship-shape." In the Wheat field, it may be remembered we stated that 19 acres had been planted; these were of two sorts, viz., English white, electrified, 9 acres; unelectrified, 1½ acres. Manitoba, electrified, 3 acres; unelectrified, 5½. Sowing took place in February, and the current was turned on in March, when the plants were well showing. The ground had been somewhat trampled upon while the poles and wiring were being erected, and this did not improve the crop. So far the crop promises well and should prove quite 30 per cent. heavier, while the yield of straw is considerably greater. On the electrified portions of the field, the noticeable difference is better stooling, which results in a larger number of ears, but at present it is not noticeable that the number of grams per ear or the size of ear has increased. The straw is from 4 to 8 inches taller, and the plant itself is apparently stronger, but it was no earlier than the unelectrified part. The difference in the Manitoba yield is more noticeable, though with the Barley it is not observable on account of disturbing factors. As to the manure used, last autumn the part experimented upon was fertilised with farmyard manure, while artificials were used on the control part in the spring. It is practically impossible to say if it will pay until the crops are in, and the actual increase is known. It depends entirely upon what the increase of crop, minus the running expenses and depreciation, will pay on the capital expended. A one horse-power plant will supply 50 acres, and running expenses are not a considerable item, and, of course, depreciation of the plant should be small. Installation varies according to local conditions, but it should vary from £15 to £20 per acre for areas up to 10 acres, and £5 per acre for 100 acres.

LINCOLN PARK. We learn from the American journals that the Kentucky farm where ABRAHAM LINCOLN was born has been secured for the nation, and that it will be developed as a public park. It comprises an area of about 110 acres, which are to be laid out by Mr. GUY LOWELL, of Boston.

THE BOTANICAL MAGAZINE.—We learn that Mr. HEMSLEY is only responsible for the very interesting historical introduction to the *Botanical Magazine*, and that the index itself was not compiled by him. This is to be regretted, as various corrections and critical notes, which have accumulated at Kew, have in consequence been omitted.

PLANT FOOD REQUIREMENTS OF BEARING FRUIT TREES.—The New York State Experiment Station has, says the *National Nurseryman*, recently made an investigation of the food used by bearing fruit trees during one season's growth. This investigation included the Apple, Peach, Pear, Plum, and Quince. The figures seem to show that "the relative proportions of the different plant-food constituents are approximately the same for the different varieties of fruit trees. This means that, under like conditions of soil fertility, a mixture of nitrogen, phosphoric acid, and potash which would meet the requirements of one variety would also meet the needs of the other varieties, so far as the supply of these plant-food constituents is concerned. What particular proportions are best adapted to meet the needs of any particular soil can be determined only by special experiment." The amount of plant-food taken from the soil per acre by the different crops and compared with wheat is shown in the following table:—

Variety.	No. of trees per acre.	Nitrogen, pounds.	Phosphoric acid., pounds.	Potash.
Apple ..	35	51·5	14·0	55·0
Peach ..	120	74·5	18·0	72·0
Pear ..	120	29·5	7·0	33·0
Plum ..	120	29·5	8·5	38·0
Quince ..	240	45·5	15·5	57·0
Wheat ..	*20	39·5	12·0	16·2

*Bushels.

This demonstrates that the Peach uses the largest amount of plant-food. The pome fruits give results much alike. But all of the fruits use more food than will an acre of Wheat yielding at the rate of 20 bushels of grain and a ton of straw. The moral is, therefore, that our acre of fruit trees should receive larger amounts of fertiliser than the same area of Wheat. Yet the practice is in many sections to fertilise for Wheat and let the fruit trees take care of themselves.

PHENOMENAL HAILSTORM IN IRELAND.—In the early afternoon of June 28 the inhabitants of Ballinora were suddenly enveloped in intense darkness. Only a few seconds more elapsed, and the hail, or rather the fragments of ice an inch in diameter, beat the earth with a tremendous force. The writer has seen Potato gardens with not a stalk left standing—cut down as if by the hand of the mower. The Oat crop has suffered in a similar manner. Mangels and Turnips met the same fate, but the latter show some signs of recovering, and, owing to the long time for growth yet before them, may not result in serious loss. It appears to have been at its height in the Ballinora and Ballincollig portion of its course, as evidenced by the great destruction in those places, trees 12 inches in diameter having been smashed half-way from the base. The time taken by the cyclone to pass over a given point was about ten minutes; the breadth or diameter of the spiral, judging from its destructive effects, could not exceed quarter of a mile, and the edges must have been well defined.

GERMAN NURSERYMEN.—The Society of German Nurserymen (Verband der Handelsgartner Deutschlands) announce that the office of the Society has been removed to 97-98, Bergstrasse, Rexdorf, Berlin. Herr BECKMANN is the general secretary.

BRITISH GARDENERS' ASSOCIATION. At the last meeting of the executive council of this association, Mr R. HOOPER PEARSON in the chair, 24 new members were elected, bringing the total number up to 925. Mr. W. H DIVERS, head gardener to His Grace the Duke of PORTLAND, Belvoir Castle, Grantham, was unanimously elected chairman for the ensuing year, and Mr. R. HOOPER PEARSON, vice-chairman. Several members of the association having enquired if a tour round the gardens and nurseries in Belgium could be arranged this year, under the auspices of the society, the council considered the time now at their disposal was insufficient for making proper arrangements. The secretary, however, was requested to obtain information with a view to arranging a continental tour for gardeners in 1907. If it is possible to make arrangement for meetings of the association during the Shrewsbury show in August and the Edinburgh show in September, this will be done in order to bring the objects of the association before gardeners in the provinces, and to combat the erroneous views that still prevail in many quarters on this matter.

THE PREVENTION OF COMMERCIAL CORRUPTION.—The House of Commons lately passed through its final stages a Bill, the necessity for which is generally acknowledged. The facts brought to light startled the public at the time, but many of them now are only too familiar. The late Lord Chief Justice RUSSELL OF KILLOWEN gave instances of goods being wilfully destroyed by corrupt employés in order that they might get a fresh commission on a fresh order. He showed that throughout our commercial and industrial life the practice of secret commissions was creating, and still is creating, gross dishonesty, and he demonstrated that without an amendment of the law the evil would grow worse, for the dishonest would drag down the honest. The present Government, to its credit, declined to allow the opposition of a few members to stop so important a measure. Whether the Bill will do all that is hoped from it remains to be seen, but it at any rate, says the *Daily Graphic*, stamps as a crime a form of corruption which is a disgrace to the character of our commercial life. We do not see how foreign dealers are to be prevented from offering illicit commissions and discounts, or how the consciences of the recipients are to be awakened.

The Thoughtlessness of Plants.—"Indeed," says the *Moniteur du Jardinier*, "what thoughtless things fruit trees are. Every year the sun and wind play the same tricks, and every year the plants are deceived by them. For centuries past March weather has been at first fine and spring-like. Then, despite precedents, almanacks, past experience, proverbs, without even consulting newspaper reports, all of them—Peaches, Almonds, Plums, Pears, Apples—clothe themselves in their beautiful white, rosy, or red blossoms. They are admired, for they are exquisite, fresh, beautiful, in the youth of the year. A week passes, frosts set in—result, faded flowers and a bad crop. Old as well as young, untaught by experience, next year the flowers again begin the same proceedings, untaught and unteachable." So says our contemporary, but if the plants could speak would they not say that the cultivators are equally heedless of experience?

Index Kewensis.—We are glad to announce the publication of the fourth and concluding part of the first supplement as prepared by Messrs. Durand and B. Daydon Jackson. This brings the list down to the end of 1895. The delay in publication is, we regret to learn, attributable to the impaired eyesight of M. Durand, who says that the correction of the proofs has entailed on him much suffering.

Summer Holidays.—There is much talk of holidays at this time of year, so intending travellers may be glad to obtain information concerning the many beautiful and restful places to be found by "Doctor East Coast," and, further still, in the same direction, via the Hook of Holland to the Continent in general. Mr. Percy Lindley's new guide book, published by the Great Eastern Company's authority, is quite as attractive as its predecessors. It is, indeed, apparently an enlarged form of them, with coloured pictures added. The information is practical as well as eulogistic, and those choosing a place wherein to pass the summer holidays may be advised to consult its pages.

Flowers in Season. On the 25th inst., we received a large bunch of flowers of Chrysanthemum maximum from Mr. G. Hawley, Brookfield Nursery, Swinton, near Rotherham. This hardy species is one of the best border plants for cultivation where the soil is rich and moist, but if at all starved much of its handsome habit is destroyed. There are now many varieties with larger flowers than those of the type, and presumably they have all arisen by selection. The varietal name attached to the flowers received is that of Britannia, and they have certainly been most liberally cultivated.

Fig. 29.—Strawberries at the station waiting to be unloaded.

Fig. 28.—Packing the strawberry fruits.

THE STRAWBERRY CROP.

In spite of the gloomy prognostications concerning the Strawberry crop, the season that is now over does not appear to have been very much below the average. May frosts took their usual toll, but that is an event which we ought to regard nowadays rather as the rule than the exception. Every year when the bloom is out frosts occur somewhere in England, not only in May, but even in June. This year there was a sharp frost in the Southampton Strawberry-growing district on June 2, but it came too late to do any serious damage, as most of the fruit was set. A single frost, indeed, seldom does any great amount of harm. It will probably destroy a large number of the blooms that are actually out, but others will be protected by the foliage, and those that are already set or not yet open will not take any harm, unless the frost be something very exceptional. It is fortunate that the Strawberry plant does not produce all its blossoms at the same time, for if that were so the chances of a spring frost destroying the crop at one fell swoop would be far more often realised than at present.

As for prices, they have been as low as ever this year—a sure indication that the supply has not been insufficient to meet the demand. Even at the very beginning of the season, when the Southampton crop had only been on the market a day or so, one might have seen Strawberries being sold at 3d. and 4d. a pound on the barrows in the streets. The fruit was not, of course, of the best quality, but it was passable, and if there was a profit at all on the retail price, the grower must have received very little. In the shops at the same time the best berries were fetching 10d. to 1s. a pound, while a few selected baskets of about three-quarters of a pound each could be had for 1s. to 1s. 6d. apiece, according to the time of day and the freshness of the fruit. Smaller berries, or "seconds," and rather "squashy" at that, brought 6d. a pound, and a little later went so low as 4d. Then the glut came, as it always does, and best fruit could be had for 6d. a pound, and fairly good berries at 4d. Retail prices do not generally go much below that, but the figures of the retail shopkeeper are not always a true guide to the

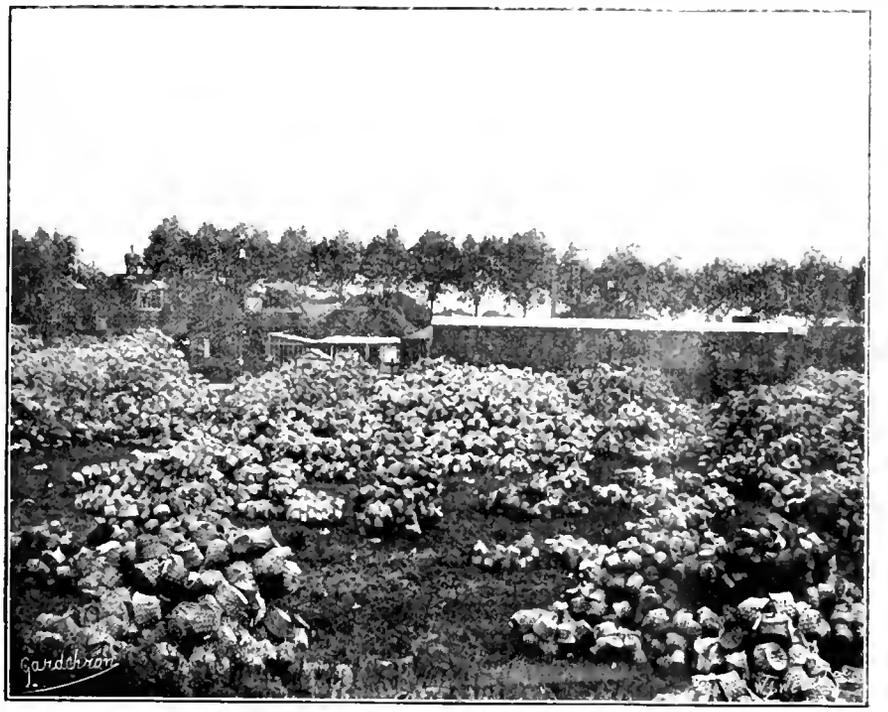


FIG. 30.—"RETURNED EMPTIES" AT SWANWICK STATION (L. AND S.W. RY.).

state of the market at the moment. He has to think of yesterday and to-morrow, and to make the good days compensate, if possible, for the bad.

At the height of the season the Southampton growers were receiving from about a shilling to eighteen-pence a gallon for their fruit, a gallon being anything between 5lbs. and 6lbs., without any special weight being guaranteed. It would be better if these "reputed" gallon baskets were made to a specified standard, so that they could contain a guaranteed weight of fruit, and not, as now, just as much or just as little as they will hold. The grower would benefit if this standard of weight were adopted, because the purchaser would know exactly what he was buying. At present the retailer, as well as his customer, "buys a pig in a poke." Six pounds of fruit is "supposed" to go to the gallon basket, and the fruit is usually sold just as it is received from the grower, without being handled in any way. This, of course, is a great advantage in the case of an easily damaged fruit like the Strawberry, but the system has the drawback referred to. Strawberries picked in this way are usually sold, "basket and all," and the purchaser cannot tell, except roughly, how much fruit and how much basket he is buying at so much a pound. The baskets themselves vary greatly in size and weight, and sometimes they are not absolutely dry, for it is no uncommon sight to see them left out in the rain or in open sheds, where they are only partially protected from weather. The Kent grower, who sells his fruit by weight in bulk, and not by reputed measure, gives better value to the purchaser in the matter of weight, but not in quality, because in most cases the Strawberries have to be handled again before being delivered to the purchaser. Peck-baskets, as used in Kent and Sussex, are of the ordinary flat market shape as used for Peas and other bulky crops, and they are by no means the best kind of packages for the marketing of such easily-bruised fruit as Strawberries. These baskets contain 12 lbs. of fruit, but few purchasers require so much fruit at a time, except for jam-making. The result of this is that the Strawberries are bundled out of their baskets into a large tray, from which they may be scooped up as wanted. As a result of the turning-out process and the subsequent scooping up, the fruit is badly damaged, and is never worth as much as that which is sold in the original packages as it left the gardens. It seems surprising that the Kentish growers have not long ago appreciated this fact, and adopted the handle basket for marketing their fruit. Perhaps they are influenced to some extent by the fact that the railway companies are always ready to grant a low rate for the carriage of fruit packed in the larger flat baskets, but this surely must be very false economy on the part of the grower. It is much easier for the railways to handle fruit of any sort in 12-lb. flat packages than in baskets of half the size and weight with handles. The former take up less room, weight for weight, than the latter, but it is obvious that no one, even if more careful than the ordinary railway porter usually is, can handle the heavier packages without handles as gently as the lighter baskets with them, and the natural result is that the peck-baskets get dumped down far more roughly than the others to the great detriment of the fruit within. There cannot be any doubt that the Southampton growers market their fruit under better conditions. They may have to pay a higher rate for using the handle baskets, because the railway company have to put up special vans with shelves to carry this sort of traffic, but the better condition of the fruit on arrival at the market should amply repay the extra labour and expense involved. If the Hampshire grower could improve his methods still further by using baskets of one uniform size with a guarantee to the salesman (and the subsequent purchaser) as to the nett weight of the fruit, the kind of package he employs could hardly be improved upon.

In this branch of the fruit industry, however, we again find the fault which is so common a feature of the fruit trade in England. Foreign fruit-growers—especially the French and the Americans—have long ago recognised the value of grading their fruit according to size and quality. Not so the Englishman, who is very slow to learn a lesson which has been brought home to him so bitterly on many occasions. The home grower still persists in attempting the old fraud of placing the best berries on the top and the inferior ones down below. It is a system of deception which deceives no one, if one may be permitted the contradiction of terms. The salesman knows all about it, the retail shopkeeper learned the trick the very first time he handled a basket of British fruit, and the customer is never [?] imposed upon by the practice. Why, then, is the British grower so persistent in his obstinacy? There is no need to grade fruit too closely, but there should be a severe line drawn between good and bad—"firsts" and "seconds." It is no good putting damaged, unripe, misshapen, or small fruit at the bottom of the basket, in the hope that it may not be discovered. Someone is bound to come across it, and a dissatisfied customer will be the result. And it should be remembered that every time a customer is dissatisfied with British fruit he is tempted to patronise the foreigner. This remark applies to every kind of fruit as well as to Strawberries. The average customer does not care whether he buys fruit of British or foreign origin so long as it is good and reliable. Sometimes, of course, he has to buy what he can get, but when he has the choice he is more likely to buy good foreign Cherries than bad English Strawberries, and properly-graded American Apples in preference to a lot of English nondescripts of five or six different sorts all bun-

FIG.—31.—A GOOD USE FOR OLD "THIRDS."

dled anyhow into one basket. The English grower has plenty to learn yet in the matter of marketing his fruit, especially as regards grading and careful packing.

Few people have any idea of the magnitude of the Strawberry industry of the present day, but the importance of the business may be well gauged by a glance at the following figures, kindly supplied by the London and South-Western Railway Company. During last season no fewer than 1,480,000 baskets of Strawberries were despatched from the district near Southampton, which includes the neighbouring places of Bursledon, Swanwick, Wickham, Fareham, Botley, Sholing, &c. This huge number of baskets, the aggregate weight of which came to about 3,400 tons, required an average of six special trains a day at the height of the season to bring it to the market. London took about half of this gigantic crop, and the rest of it went to the large towns of the Midlands and the North. Scotland is also a good customer, and repays in some measure the amount she consumes by sending to the South, after the English crop is over, the bulk of the crop grown in the neighbourhood of Glasgow, where the Strawberry does well. And yet, in spite of these astonishing figures from the Southampton district, last year's crop was below the average, owing to frosts. The counties of Kent and Sussex also supply the large markets with consignments of Strawberries, and Cornwall does a small part of the business early in the season. But for extensiveness of cultivation, the Hampshire Strawberry-grower is easily first, and his crop is generally in the market a week before the Kentish berries are ready. The most surprising thing about it is that the gravelly soil around Southampton is fit for very little else except Strawberry growing, and it is not so very many years ago that the now prolific fruit gardens were nothing but a waste of gorse and rank grass hardly good enough to keep the hungry donkeys and horses of the gipsy folk who encamp thereabouts. *East Sussex.*

HOME CORRESPONDENCE.

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

CEREUS CANDICANS.—Thinking it may perhaps interest some of the many readers of this paper I beg to make a few remarks on this plant. Having two in my possession and both flowering this year, I was surprised to find the flowers were very different, although the plants are just the same in appearance, and have been here many years, with a few other varieties. There is some difference in them as to size, one having flowered several times—the smallest one; this is 4 feet or more long, and the other 6 feet or more. The longest one flowered for the first time this year, after over fifty years' attention and care. The flower was very much smaller, and the petals narrower and stiffer. The other plant had a large reflexed flower, broader petals, and a longer foot stalk, but they were not measured or touched. Perhaps some of your readers may have had these in flower and noticed. I am no botanist, and only grow a few plants for recreation and love for them, and sometimes they show me their beauties. My days are declining, and they are now much neglected, I am sorry to say. *J. C., Didcot.*

AGAVE CELSIANA NANA.—This very pretty dwarf plant flowered with me last year, but the leaves did not show signs of decay, and after a time it made a move close to the old stem, which is now producing four young buds, whilst the old leaves still retain the sound condition they had before flowering. The original plant flowered many years ago, and produced two plants in the same way; but after being taken off one of these rotted, through some unknown cause. My present plant is in a very small pot for an Agave. I grow some in saucers, when it is difficult to water them in the pots, as the leaves are very close to the soil, making it difficult to give them water. I have found most that have bloomed had the saucers. I have just made two pots of the A. Ousselghemiana that flowered some years ago, and produced two, close to the stem; also the variegated variety. I am fond of Agaves when they are not too large, but should not object to the others if I had plenty of room, as they are very grand plants. I have a few now—some very rare, and not new either. *J. C., Didcot.*

CHILDREN'S EXHIBITS AT THE HANLEY SHOW.—A very interesting section of the Hanley Show, of which a report was published in the last issue of the *Gardeners' Chronicle*, was that devoted to exhibits by children. The exhibitors were confined to those attending the schools in the county borough of Hanley, and it was most gratifying to the promoters to find that this year there were no fewer than 2,200 entries. The classes were for window plants, wild flowers, leaves of trees, and grasses, and the material got together was remarkable, considering the surroundings of the neighbourhood. All kinds of pots and other utensils had been pressed into service for the rearing of the plants, one exhibitor, through lack of a more suitable receptacle, had grown her plant in a meat tin. Some of the children had walked many miles to gather the leaves and grasses, because several of the varieties exhibited are not to be found within a wide radius of Hanley. This exhibition is certainly a step in the right direction, and those who are striving to encourage a love among the young for flowers, and for the study of wild flowers and grasses of the district, are to be congratulated on the success of this section of the Hanley Show. *C.G.H.*

YELLOW-GROUND PICOTEES (see figs. 32 and 33).—Of all the dainty flowers ranged under the head of Dianthus none can excel the yellow-ground Picotee, with its rich edging of carmine or deep crimson, and sweet perfume. Mr. Nigel is one of the best of these, a large flower heavily edged with crimson. Gronow is a blossom of perfect form in primrose-yellow edged with carmine, and Amphion is more deeply marked with the same tint on a pale apricot ground. These charming flowers should be more often seen than they are; in any ordinary soil they will flourish if planted in October, the border being previously well trenched and manured. Good drainage is essential, and to a damp, heavy soil, burnt vegetable rubbish and crushed mortar should be added. Soot is a chemical manure which suits all Carnations if mixed with their compost. Moreover, it is inimical to their special enemy the wire-worm, and therefore it is also of value in this direction. Dalkeith, a very similar blossom to Mr. Nigel, is one of the finest of the late introductions, and Louisa is of specially fine form, with a narrow margin in rose colour. *I. L. R.*

WATER GARDENS.—In Mr. Mallett's article on this subject (p. 322), I note that Polygonum sphærostachyum (= P. macrophyllum according to *Index Kewensis*.—ED.) is mentioned in connection with P. cuspidatum as being "eminently fitted for planting by the water's edge." In the case of the first-named, this must be a literal error. Probably P. polystachyum is meant. Polygonum sphærostachyum is a rare and beautiful species from the Himalayas, and is one of the most attractive rock plants in cultivation. Scarcely 6 inches in height, the brilliant carmine-scarlet or blood-red flowers are produced in roundish drooping heads about 1 inch in diameter. It is rather difficult to grow, unless care be taken to layer the young procumbent growths in gritty soil. Given a well-drained position, and attention in the detail indicated, as well as a sufficiency of water when growing, there is no reason to despair of its cultivation. A remarkably handsome feature of the tall-growing "knotweeds" is the winter aspect of the graceful bamboo-like stems. Denuded of foliage, the lissom grace of the knotted stems is seen to the greatest advantage, while the warm, ruddy brown colour, which is developed mostly on the "sunny side" of the woody growths, adds not a little to the value of such species as P. cuspidatum and P. sachalinense.

Another plant which should be given a position where its roots may have access to an ample water supply is Romneya Coulteri. Until recently, the only position where experts considered it possible to grow and flower this plant was at the foot of a south wall. But now that we know of giant specimens growing entirely unprotected in the open ground (I heard of a plant recently in a Scottish garden which attains annually a height of 7 or 8 feet, and is rarely cut to the ground in severe weather), we may safely afford this noble Poppy-wort a more moist and a cooler position. The plant is a gross feeder. One specimen I know of has developed roots in the direction of a manure tank with unmistakable advantage, both to its general appearance and to the size and number of the flowers.

Correspondents in South Africa speak of acre after acre of marsh-land covered with species of Kniphofia, and dwell in glowing terms on the magnificent spectacle which is presented when the plants are in bloom. Is it not possible that we in this country could do better with the Torch-Lilies by affording them positions wherein ample supplies of moisture would be available? Of course, I know quite well the difficulty which is experienced in keeping these plants alive through the winter, particularly when newly planted, unless the position is well drained. There is the same difficulty in the case of Iris laevigata, but the best results are obtained in ground which can be flooded with water in summer, and I venture to think that similar treatment accorded to the Kniphofias would give results that would justify the attempt to reproduce natural conditions.

Lychnis chalcedonica is another plant which might be grown in moist positions with admirable results. Magnificent specimens, 4 feet high, with massive heads of the most brilliant scarlet flowers on erect stems clothed to the base with luxuriant foliage, present quite a different appearance from the starved specimens usually seen in borders of herbaceous plants destitute of foliage 1½ feet from the ground. In my opinion this is one of the best red-flowered perennials in cultivation, and I have found it respond to generous treatment in a way that, to me, was perfectly astonishing. Bright red is a somewhat rare colour by the water-side. Spiræa venusta, pink, in its best form, possesses plumes of a rich carmine-red colour, and attains a height of 6 feet in a moist position. The colour is more pleasing than that of Astilbe Davidii, another red-flowered plant which thrives in moist situations. I should very much welcome any information about a plant in cultivation under the name of Spiræa Humboldtii. It is a tall-growing herbaceous perennial, with a somewhat woody root-stock. Of robust habit, resembling S. Aruncus in general habit and S. lobata (venusta) more particularly in its inflorescence, the plant as grown here is quite distinct from either, and forms one of the most notable features on a July border. The chief distinguishing features may be cited as consisting of creamy-white flowers on white stalks, the lack of colour extending some little way down the rachis. Growing about 5 feet high, the graceful stems are clothed with elegant bipinnate foliage, the leaflets being more notable than in the case of most Spiræas for the sharply-pointed, almost spiny serrations. *E. Horton, Neston, Cheshire.*

——Whilst it is unquestionably a matter of opinion, I cannot but think the inclusion of such plants as Lychnis chalcedonica or any other garish border plant, in a water garden, is a step in the wrong direction. A water scene should be restful to the eye, and Lychnis chalcedonica will not contribute to this. The inclusion of well-known border-plants that can be well grown in their rightful places, particularly those of brilliant colouring and stiff habit, detracts from the interest a water garden should afford, by robbing it of its individuality. There are scores of plants, well fitted for waterside display, that cannot be well accommodated in a plant-border but which would lend interest to any description of water garden. What would your correspondent think of the artist who faithfully portrayed a water scene in all its many gradations of tone, light, and shade, and then, "just to give it colour," introduced a grouping of the most brilliant scarlet flowers, in massive heads, of Lychnis chalcedonica? Romneya Coulteri I have tried by the waterside; two years ago I planted six pot specimens in what I judged to be an ideal position—now there is but one sickly survivor. The Kniphofia described as an inhabitant of acres of marshland

in South Africa is the common K. aloides, according to many faithful correspondents—a plant that proves in this country to be the hardiest of its race; it grows well by the waterside, doubtless, but whether it is desirable to introduce such a tramp in a water scene is another matter of taste; there are several refined Kniphofias of hybrid origin that would contribute to an artistic *ensemble* by the waterside if grouped on the higher elevations. Mr. Horton has not quite grasped the purport of my article. I did not aim at supplying a list of plants that could be grown by the waterside, but of those that it was desirable to include in a water scene. More than half the border plants grown to-day would benefit by the moister conditions, but they would not constitute a water-garden even if planted by the waterside. *G. B. Mallett.*

POTATO TRIALS AT MESSRS. SUTTON'S, READING.

ON Friday, the 20th instant, by invitation of Mr. Arthur W. Sutton, a number of members of the Scientific Committee of the Royal Horticultural Society visited the trial grounds near Reading. The trials inspected were as follows:—

Trials on different soils of Solanum Commersoni, Solanum Commersoni Violet (Labergerie), and "Blue Giant" Potatos.

Comparative trials of several varieties growing from seed tubers harvested last season in the South of England, Lincolnshire, Scotland, and Ireland respectively.

Experiment to show effect of seed tubers fully and also partially matured.

Experiment to ascertain the result of planting tubers slightly affected with "Potato disease" (Phytophthora infestans).

Trials to show the comparative value of earthing up and growing on the flat.

Trials of "Up-to-Date" and varieties which to a greater or less degree resemble it.

Trials of "Abundance" and varieties possessing somewhat similar characteristics.

Rare species and wild types.

The above trials presented a number of extremely interesting features. Taking them in their order, a number of plants of Solanum Commersoni were exhibited in conjunction with M. Labergerie's assumed variety of the same species, and plants of the Blue Giant, a variety of the cultivated S. tuberosum. The species S. Commersoni is a small growing white-flowered species of stoloniferous growth, bearing somewhat heart-shaped berries and producing underground stolons, and small, very bitter, and quite uneatable tubers, in all ways different from S. tuberosum. Although sown by Messrs. Sutton for some 25 years, this species has never varied to any appreciable extent, and, despite innumerable attempts at cross fertilisation, only five seeds have been produced, and only one of these has produced a plant which is still young, and is presumably a hybrid. Berries, however, are fairly freely produced, but the seed proved abortive with the one exception cited. The reputed variety S. C. Violet not only differs entirely from its attributed parent, but closely resembles a known variety, Blue Giant, of German origin, that very little if any difference can be seen between them. Blue Giant has round berries, bluish flowers, is not stoloniferous has large blue edible tubers, and in all general respects ranks with the many forms of S. tuberosum or the common Potato of commerce. Blue Giant, furthermore, had been freely distributed for some years prior to the appearance of M. Labergerie's variety, and although the good faith of that gentleman is beyond question, the opinion of all the above-named gentlemen was unanimous that some mistake had occurred, and that probably by some accident a tuber of Blue Giant had been in the soil in which M. Labergerie had planted his tubers of S. Commersoni, and that this had led to a not unnatural misconception. The extremely close resemblance of the supposed sport with Blue Giant, and the very wide difference from S. Commersoni, in so many specific characters, flower, fruit, habit, foliage, tuber and stolon, constitute features such as are never seen in sports or mutations. All the characters of M. Labergerie's plant, in point of fact, are S. tuberosum characters, while all those peculiar to the asserted parent (Commersoni) are absent.

We may add, with reference to the statement that M. Labergerie's Potato is specially adapted to grow in wet places that Messrs. Sutton have specimen plants of Commersoni and of M. Labergerie's variety growing in or in immediate proximity to the moat surrounding the old manor house, but no differences were perceptible between these plants and those grown on drier soil.

The notion, therefore, that through S. Commersoni, any improvement in the disease-resisting qualities of commercial Potatos could be expected falls to the ground.

Prior to inspection of the above plants, a visit was made to a series of experimental beds designed to test the relative vigour and yield of Potatos, the seed tubers of which had been derived from the South of England, Lincolnshire, Scotland, and Ireland, a point of great agricultural importance, and in nearly every case it was clearly seen that tubers derived from sources where the climate was such that they ripened less perfectly produced much stronger haulm and heavier crops than those which came from southern and warmer sources, and were consequently thoroughly ripened. The evidence to this effect was extremely striking and conclusive, and it was stated by Mr. Sutton that, so far as was possible, the seed tubers obtained were from plants which had been acclimatised in their place of last origin for two years, one year hardly sufficing. A number of popular varieties were grown to demonstrate this principle, and the exceptions were too rare to vitiate the rule that it is advisable not to plant perfectly ripe seed tubers, but only partially matured ones.

Experimental rows showing the comparative value of earthing up and of growing on the flat showed practically no difference in the amount of haulm, and was regarded as the measure of the crop, which it was too early in the season to judge of otherwise. Other rows comparing the results of planting seed-tubers slightly affected with the Potato disease and sound ones showed, as might be expected, a material difference in favour of the latter, both in the extent of haulm and the absence of failures.

Time did not permit of inspecting the results of other trials, which were, moreover, of a minor nature, the main points being as detailed above.

The visitors partook of luncheon in the very ancient and half-ruined, moated, manor house, Southcote Manor, and were joined there by the Rev. Alan Cheales, of archæological renown, and of Rose-growing fame, who gave an interesting account of the mansion and its history.

[Further details relating to these Potatos are given in the report of the Scientific Committee. The differences observable between plants from M. Labergerie's tubers and those of Blue Giant are, if constant, so trifling as not to be recognisable on casual inspection, as the plants grow in rows side by side.—ED.]

ANATOMICAL CLASSIFICATION OF CERTAIN FERNS.—M. FERDINAND PELOURDE publishes, in a recent number of the *Comptes Rendus*, March 12, 1906, the outlines of a system according to which he would re-classify the species. He considers that the genera Asplenium, Polypodium, and Adiantum, are truly homogeneous. Asplenium shows close affinities with the genera Scolopendrium and Ceterach, and is as distinctly separate from the genus Athyrium as is the genus Polypodium from the genus Phegopteris. The genus Nephrodium is heterogeneous, and a division should be made so as to class Aspidium angulare with species of the former series. The genus Pteridium is distinct from the true Pteris.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 17.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair), Dr. M. C. Cooke, Sir John Llewelyn, Bart., Prof. G. Boulger, Messrs. A. W. Sutton, G. Massee, J. Douglas, W. C. Worsdell, and F. J. Chittenden (hon. sec.).

Remarkable Seedling Picotee.—Mr. DOUGLAS showed a curious plant raised from seed of a yellow ground Picotee crossed by pollen from a similar flower. The parents had long robust leaves, and were of the usual habit of the group, while the seedling had a very tufted habit, very much shorter and narrower linear leaves, much more glaucous than the parents, and small yellow semi-double flowers having slightly notched petals, the teeth being tinted red. The plant grew for three years before producing flowers, whereas one year is the usual period. There seems to have been no chance of cross breeding having occurred with another species.

Variation in Pinks.—Mr. DOUGLAS also showed an interesting group of flowers from Pinks grown from seed of the best varieties to demonstrate the exceeding variability in the flowers, both in the amount of doubling and the form and coloration. A considerable number revert to the single form.

Lateral Prolification in Carnations.—Mr. DOUGLAS also showed examples of a yellow Carnation in which the axis had branched at the base of the flower, producing a considerable number of lateral buds, a condition very frequently seen in Roses. A vote of thanks was unanimously accorded Mr. DOUGLAS for his interesting exhibits.

Malformation in Pea.—Mr. A. W. SUTTON showed a Pea plant where the flowers were abortive in a similar manner to those seen in the Bean shown at a recent meeting by Mr. DOUGLAS. This condition, which affected all the flowers on the plant, and on this plant only out of many thousands growing in a field, is said to be brought about by the presence of a species of gall-mite (Eriophyes).

Fasciation in Mangold.—Mr. SUTTON showed a remarkable specimen of this common phenomenon in a Mangold, where the flower-bearing stem measured nearly 2 inches in diameter.

Virescent Clover Heads.—Heads of Trifolium repens, in which some of the floral parts had been transformed into foliaceous leaves, were also shown by Mr. SUTTON. This well-known peculiarity has been shown to be due to the presence of an insect in the stem, probably Hylastinus obscurus, Marsh. (See M. Molliard in "Comptes Rendus," Nov., 1904, p. 930, and "Journal Royal Horticultural Society," vol. 29 (1904), p. 924.)

Tuberous Solanums.—Mr. SUTTON also showed a very interesting series of plants of tuber-bearing Solanums, together with water-colour drawings showing habit, &c.

1. Wild types of the following species raised from seed sown in March, 1906, and planted in the open in May.

(a) Solanum tuberosum, the true wild type now cultivated possibly for the first time in this country, raised from seed. The plants did not exceed 8 inches in height.

(b) Solanum verrucosum, about the same height as the preceding, but very different in habit.

(c) Solanum polyadenium (Greenman), collected in September, 1904. A very hairy species.

In all these three cases the specific types of Solanum have reproduced themselves absolutely true from seed without any variation whatever. This is the more remarkable because in no single case does the cultivated Potato of commerce come true from seed, and very seldom, if ever, does any individual seedling raised from a seed-berry (often containing two hundred seeds) from the cultivated Potato at all closely resemble its parent. The seedlings from the above three types are all equally true to the parent forms.

2. Specific forms of tuber-bearing Solanums raised from tubers, with illustrations of habit

(a) Solanum Maglia, as received about 20 years ago, and grown since then in Reading.

(b) Solanum etuberosum, as received about 20 years ago.

(c) Solanum, a type or species known as Papa d'amarilla, bearing a great resemblance to the type of S. tuberosum mentioned above. Mr. SUTTON had never known this variety to produce seed.

(d) Solanum Commersoni, the type as grown at Reading for several years.

3. Specimens of Blue Giant and of Mons. Labergerie's so-called Solanum Commersoni Violet variety.

(a) The Potato Blue Giant raised from tubers supplied by the raiser, Herr Paulsen, of Germany.

(b) The Blue Giant raised from tubers received from M. M. de Vilmorin of Verrières.

(c) Mons. Labergerie's so-called Solanum Commersoni Violet variety raised from tubers received direct from Mons. Labergerie's agent.

(d) Mons. Labergerie's so-called Solanum Commersoni Violet variety raised from tubers received from M. P. de Vilmorin of Verrières.

The last four specimens showed the extraordinary effect produced upon a crop of Potatos by the variation in soil or locality in which the tubers producing such a crop were grown.

The two specimens of Blue Giant and the two specimens of the alleged variety of Solanum Commersoni differed from each other much more than the specimens of Blue Giant differed from the Solanum Commersoni Violet variety of Labergerie grown in similar soil. Indeed, these two alleged different varieties were practically alike in appearance.

Malformation of Potato Flower.—Mr. SUTTON also showed an inflorescence of the Potato Up-to-Date, in which one of the flowers had the petals partially converted into stamens, the remaining flowers being normal. This inflorescence was taken from the plant which bore flowers all having a similar malformation shown by Mr. SUTTON before the committee on August 1, 1905.

Pisum sativum.—Mr. SUTTON also showed a specimen of Pisum sativum grown from seed collected by him from a plant growing semi-wild in a vineyard near Jaffa. The plant was about a foot high, had much serrated leaves and stipules, coloured flowers, and short curved pods. It had been crossed with the Duke of Albany Pea, and had produced a tall plant (which was also shown) somewhat intermediate in the foliage, having a dark coloured spot in the axil of the leaves, coloured flowers, and intermediate somewhat curved pods.

A hearty vote of thanks was accorded Mr. SUTTON for his numerous and interesting exhibits.

Colour in Sweet Pea Tendrils.—At a recent meeting Mr. CUTHBERTSON raised the question of the correlation of the red or green colour of the tendrils in certain varieties of Sweet Peas with other characters in the plant. He now sent specimens illustrating the possibility of the practical utility of attention to this character as an aid in "roguing" in the young stages of growth. A row of the Pea Captain of the Blues was carefully examined some time before flowering, and one plant that differed from all others in having green tendrils instead of red was marked. The flower of the normal Captain of the Blues has blue wings and a darker standard, while the marked plant was white marbled with blue all over. It is interesting to note that, as Mr. BATESON has previously pointed out, the red colour of the tendrils is usually correlated with a dark spot in the leaf axil, but in this variation the leaf axil possessed the dark spot which is found in all normal specimens of Captain of the Blues, although no trace of red colour was to be seen in the tendrils. Mr. BATESON has shown that the green tendril (light axil) character is a recessive one, and Mr. CHITTENDEN remarked that while in all the so-called sports of Countess Spencer which he had seen the tendrils were green, and the axils of the leaves devoid of the dark spot, Countess Spencer itself had red tendrils and dark-axilled leaves.

Flowering of Dasylirion glaucophyllum.—The following interesting note was sent by Lady THEODORA GUEST, of Inwood, Templecombe: "The Mexican Dasylirion glaucophyllum has thrown up an immense flower stalk in the conservatory here. It has grown some 16 feet in a fortnight, and is now covered with flower buds all up the stalk. A record is preserved of its flowering at Kew in 1857, when it attracted considerable attention, but Lady GUEST believes that the flowers have rarely been seen in England." The rate of growth recorded shows more than half an inch per hour maintained for a fortnight.

Axillary Prolification of Cornflower.—Dr. MASTERS showed a specimen of Centaurea Cyanus from Mr. W. G. SMITH, in which flower-bearing branches proceeded from the first-formed flower head somewhat in the manner seen in the Hen-and-chickens Daisy.

Diseased Peaches.—Specimens of Peach leaves attacked by the shot-like fungus Cercospora circumscissa, came from near Redhill, and shoots of Peaches showing brown spots at the base of the leaves and dropping their foliage as a result of the attack of the fungus Botrytis cinera on the imperfectly ripened wood. The only thing to be done is to cut out all diseased shoots and burn them, and then spray the trees with a rose-red solution of potassium permanganate.

NATIONAL CARNATION & PICOTEE (SOUTHERN SECTION).

JULY 24.—The Southern Section of this society held its exhibition at the Hall of the Royal Horticultural Society on the above date, the exhibits being fairly numerous and of fine average quality in the more important classes.

FIG. 32.—PICOTEE MR. NIGEL.

Many non-competitive groups of Carnations and Picotees were so many added attractions to the show, and gave a better idea of the beauty of the flowers and their effectiveness as decorative subjects than the stereotyped methods of the florists, and on these grounds justified their appearance on the tables.

The exhibits throughout were divided, as is now the recognised fashion, into dressed and undressed flowers, and the first we shall notice is the class for 18 Carnations, dressed on cards, bizarres, and flakes in not fewer than 12 varieties, and not more than two blooms of any one variety. Here the 1st prize was awarded to F. WELLESLEY, Esq., Westfield, Woking (gr. Mr. W. Hopkins). The stand consisted of the varieties Rt. Houlgrave, H. Shoesmith, Rt. Lord, G. Melville, A. G. Lewis, J. S. Hidderley, W. Skirving, Sportsman, Master Fred and George, the major portion, therefore, being old favourites; 2nd, MARTIN R. SMITH, Esq., Hayes (gr. Mr. C. Blick), with varieties that are modern, of which we may mention Gitana, Hotspur, Bonnie Jean, Butterfly, La Tosca, and Chas. Kean. A cursory glance would have placed this exhibit in the first position, but the florist would have detected here and there a spot on the ground colour, which turned the scale in the favour of the unblemished lot. Mr. C. TURNER, Royal Nurseries, Slough, was 3rd.

The best 18 self-coloured varieties were shown by the winner in the previous class, a very superior stand, the flowers of large size, smooth of petal, and regular in form. There were Daffodil, a beautiful clear yellow, Carabas, a variety that always taken a high place at shows, and that came out two years ago under the name of Lustre, Miss Willmott, Mrs. Eric Hamboro', W. H. Parton, Mrs. Flight, Nubian, Much the Miller, the fine rose-coloured Mrs. Guy Sebright and Isinglass; 2nd, MARTIN R. SMITH, Esq., with fine blooms of Comet, Imogene, Bonnie Dundee, Sir Galahad, &c.; 3rd, Mr. C. TURNER, with good Glowworm, Sir Bevys, Earl of Mercia, Jocelyn, &c.

The best 18 fancies were those shown by M. R. SMITH, Esq., the flowers unusually large, equal in size, and in the best condition. The stand contained Lord Steyne, Thais, Mandarin, Hidalgo, Highland Lass, Merlin, Hector, Douce Davie, a certificated variety, Bonnie Buchanan, and The Seer; 2nd, F. WELLESLEY, Esq., the stand including Liberté (new), R. A. Rowberry, &c.; 3rd, Mr. C. TURNER, in whose stand were nice blooms of Galilee, Emperor, Mrs. Tremayne, &c.

For 18 white-ground Picotees in not less than 12 varieties, F. WELLESLEY, Esq., won the 1st prize with the varieties W. E. Dickson, Mrs. Payne, Lavinia, Mrs. Gordon, Somerhill Aggie, Amy Robsart, &c.; 2nd, M. R. SMITH,

Esq., with noticeable blooms of Patty Oliver, White Lady Dolores, Siren, &c.; 3rd, Mr. C. TURNER.

F. WELLESLEY, Esq., had also the 1st prize for 18 Picotees, yellow ground, with exceedingly regularly-sized blooms, and totally free from blemishes. Childe Harold, Lord Napier, C. F. Thurstan, and Countess Strathmore were very nice blooms having wire edges. The best of the heavy edges were Miss Meredith Seedling, Gronow, Lucy Glitters, and Ida; 2nd M. R. SMITH, Esq., with fine blooms of Raphael, Nancy Oldfield, Goblin, and Dalkeith that was 1st of its class in 1901, and Ace of Trumps; 3rd, Mr. C. TURNER.

For six blooms of self Carnations F. WELLESLEY, Esq., was 1st with Eric Hamboro', MARTIN R. SMITH, Esq., 2nd with the same variety, and Mr. C. TURNER 3rd with Lady White.

For six blooms of any yellow or buff ground fancy Carnation:—1st, M. R. SMITH, Esq., with Mandarin; 2nd, F. WELLESLEY, Esq., with Miss Leese; and 3rd, Mr. T. TURNER, with Voltaire. For six blooms of any fancy Carnation, F. WELLESLEY, Esq., was awarded 2nd prize for Mrs. J. P. Barry.

UNDRESSED FLOWERS.

In the class for 18 self-coloured Carnations shown in bottles only the 2nd prize was awarded.

DRESSED FLOWERS.

The class for a stand of 12 Carnations, bizarres, and flakes was won by Messrs. PEMBERTON & SON, Bloxwick, with fine examples of R. Houlgrave, W. Skirving, G. Melville, Thalia, &c.; 2nd, Mr. H. R. TAYLOR, of Cheam.

For a stand of 12 self Carnations, not fewer than nine varieties, Mr. H. R. TAYLOR won the 1st prize with a faultless lot of blooms, of which the varieties W. H. Parton, Leslie Miles, a fine yellow of the tint of Daffodil, which was also observed in the exhibit, a bloom of Benbow, &c.; 2nd, Messrs. PHILLIPS & TAYLOR, Bracknell, who had fine blooms of Her Grace, Daffodil, Roy Morris, and Much the Miller.

The best 12 fancy Carnations were shown by Messrs. PHILLIPS & TAYLOR, the finer blooms being Bessy Barton, Mrs. Spencer, and Merlin; 2nd; M. H. R. TAYLOR, with Amphion, Monarch, King Solomon, &c.

The best 12 white-ground Picotees were shown by Messrs. PEMBERTON & SON, 1st, who had extra good examples of wire-edged varieties; 2nd Mr. H. R. TAYLOR.

Mr. H. MATHIAS was 1st for 12 yellow-ground varieties; 2nd, Mr. H. R. TAYLOR. Then came four classes for six blooms of Picotees, and self, yellow, or buff-ground fancy Carnations.

UNDRESSED FLOWERS.

For twelve self Carnations in not fewer than nine varieties:—1st, Messrs. PHILLIPS & TAYLOR; 2nd, Mr. H. R. TAYLOR. For twelve fancy Carnations and for twelve yellow-ground Picotees, the prizes were awarded to the same growers in the same order.

A number of small competitions followed in Carnations and Picotees of all classes.

CERTIFICATED VARIETIES.

These numbered four only, *viz.*, *Little Dick*, a crimson bizarre, shown by Mr. H. R. TAYLOR; *Æsop*, a yellow-ground Picotee, by Mr. H. MATHIAS; *Lady Gascoigne*, a yellow-ground Picotee, and fancy Carnation, *Doris Davis*, both from MARTIN SMITH, Esq.

THE NON-COMPETITIVE GROUPS

were numerous, M. R. SMITH, Esq., showing a large exhibit mostly of newer varieties; Messrs. T. WARE, Ltd., had a number of plants of the scarlet self tree Carnation, Lottie Pike, and other varieties; Miss SHIFFNER, Woodland House, Lewes, had blooms of a yellow self, named King Henry. A large group of Malmaison Carnation plants was contributed by Messrs. CUTBUSH & SON, Highgate, containing several fine varieties of this and other sections; Mr. A. DUTTON, Iver, Bucks, had an extremely fine show of cut blooms of Carnations; Mr. H. MATHIAS, of Medstead, Surrey, showed Picotees and Carnations; Mr. J. DOUGLAS, Edenside, Great Bookham, had a very fine display in glasses of choice varieties of Carnations and Picotees.

Groups of hardy herbaceous perennials were shown by Messrs. R. SMITH & Co., Worcester, who included, likewise, many pictorial shrubs and trees; by Messrs. BARR & SONS, King Street, Covent Garden; Misses HOPKINS, The Mere, Knutsford, showed cut blooms of hardy flowers; Mr. LAKEMAN, Thornton Heath, showed a group of Carnation plants, the effect being spoiled by thick stakes.

FIG. 33.—PICOTEES GRONOW AND AMPHION.

M. R. SMITH, Esq., won the 1st prize for 18 fancy Carnations with Hidalgo, Flamingo, Erl King (new), Pasquin, The Seer, Infanta, Jeremy Solon, &c.

The class for 18 yellow-ground Picotees was not well filled:—1st, M. R. SMITH, Esq.

The next four classes were small ones, calling for no comment, and the champions in the previously-mentioned class were contestants in these likewise.

MARTIN R. SMITH, Esq., won the 1st prize for 12 distinct varieties selfs, fancies, and yellow-ground Picotees

NEWPORT HORTICULTURAL.

JULY 19.—This Monmouthshire society held its annual show in the King's Hill Field, Newport. The exhibits were generally very creditable productions, and occupied four large tents, though the groups of plants and specimen plants usually staged here by Messrs. CYPHER, of Cheltenham, were absent. It may be remarked that the committee might have made the show more instructive if they had insisted upon all the exhibits in reasonable instances being properly named.

GROUPS OF PLANTS.

A class for plants arranged in a space of 100 square feet brought two excellent collections. Mr. Powell (gr. to Col. C. T. WALLACE) won the 1st prize with a bright, graceful, though somewhat crowded group, composed chiefly of Orchids, Lilium speciosum, Francoa, Campanulas, Gloxinias, Palms, Eulalia, Humea, and Ferns. Mr. F. Wood (gr. to H. OAKLEY, Esq., Dewstow) was 2nd. For a smaller group Mr. J. Wiggins (gr. to R. J. MANN, Esq.) secured the leading prize.

Gloxinias in groups of 25 square feet were shown by R. P. WILLIAMS, Esq., and H. LE BRASSEUR, Esq., who were awarded equal 1st prizes.

There were Tuberous Begonias in similar groups from four exhibitors. The best came from Mr. J. Pegler (gr. to M. MORDEY, Esq.), who had splendid plants of large-flowered varieties.

For six stove and greenhouse plants in flower Col. WALLACE was placed 1st, with medium-sized, well-blossomed plants of Clerodendron Balfouri, Allamanda nobilis, A. Hendersoni, Rondeletia speciosa, Acalypha hispida. He also won the Society's Silver Medal offered for the best flowering plant in the show with the Clerodendron. G. F. COLBURN, Esq., was 2nd.

The best group of six Ornamental Foliage Plants was shown by Mr. Duff (gr. to Mrs. WILLIAMS, Bryngias, Newport).

Col. WALLACE won 1st prizes for six Exotic Ferns, six Caladiums, and for six pans of Achimenes.

Coleus were staged best by Mr. Wheatland (gr. to Mrs. J. LINTON), and Tuberous Begonias by Mr. PEGLER. Gloxinias in six varieties were splendidly staged by Mr. E. Vivian (gr. to A. S. MORGAN, Esq.).

The class for six table plants in 6-inch pots tempted exhibitors, and Mr. J. H. Pullen (gr. to G. R. MARTYN, Esq.) won the 1st prize.

Col. WALLACE had the best collection of 12 decorative plants, including six ornamental-leaved sorts and six in flower.

Mr. STEPHEN TRESEDER, The Nurseries, Cardiff, was the only exhibitor in the classes for 24 Rose blooms and 12 blooms, and staged excellent flowers.

The best hardy flowers were shown by Messrs. H. C. W. EVANS, of Llanishen, and C. H. EPSWORTH, Esq. (gr. Mr. German) was the most successful exhibitor of Sweet Peas.

Mr. A. W. MORRIS, Penarth, won the 1st prize for 12 Carnations.

Collections of fruit and single dishes of Grapes, Peaches, Nectarines, Melons, &c., were well shown, the chief exhibitors being Mr. DUFF, Mr. Long (gr. to W. T. DAWSON, Esq.), and Mr. WOOD. Vegetables were also shown in large quantities, and of excellent quality; Messrs. SUTTON & SONS, CARTER & Co., GARAWAY & Co., CLIBRANS, and J. C. WHEELER & SONS offered valuable special prizes.

TRADE EXHIBITS.

A Gold Medal was awarded to Messrs. HEATH and SON, Cheltenham, for Roses, Carnations, Sweet Peas, and Herbaceous flowers, and Silver Medals to THE KING'S ACRE NURSERY Co., Hereford, for Roses; to Messrs. TUPIN & SONS, Newton Abbot, for Carnations, Zonal Pelargoniums, &c.; and to Messrs. A. M. HARDING, florists, Newport, for Floral designs, bouquets, &c.

MANCHESTER & NORTH OF ENGLAND ORCHID.

JULY 12. *Present*: E. Ashworth, Esq., in the chair; Messrs. Cypher, Ashton, Williamson, Upjohn, Rogers, Shill, Loemann, Keeling, Cowan, Ward, Thorp, R. Ashworth, Ritchie, Parker, Stevens, P. Smith, and Weathers (hon. sec.).

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), was awarded a gold medal for a fine group of plants consisting principally of Odontoglossums, and staged alongside of this group was a fine collection of well-grown plants of Cochlioda Nötzliana, bearing a profusion of their scarlet blossoms, which was voted a Cultural Certificate. Cypripedium × Daisy Barclay, a good hybrid between C. leucochilum and × C. Rothschildianum was awarded a First Class Certificate, as was also C. leucochilum var. Hodgkinsoni. C. × "Sheila," a cross between C. Harrisianum var. superba and C. × triumphans, from the same exhibitor, was voted an Award of Merit.

J. CHARLTON PARR, Esq., Grappenhall Heys, near Warrington (gr. Mr. Masterton), exhibited a good collection of Disa grandiflora; the plants were remarkably well grown. A Cultural Certificate and special vote of thanks were awarded.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Pidsley), obtained a Bronze Medal for a group which included the new hybrid Odontoglossum × Ashlandense, a cross between O. polyxanthum and a variety of O. × Adrianæ. Cypripedium × "Britannia" was also shown.

Dr. A. HODGKINSON, Wilmslow (gr. Mr. Woore), obtained a First-Class Certificate for Cypripedium leucochilum var Hodgkinsonæ, and C. niveum, "Grange variety."

PHILIP SMITH, Esq., Ashton-on-Mersey (gr. Mr. Kitchin) obtained a Bronze Medal for a miscellaneous group, the best thing in which was a bright form of Cattleya × Hardyana, "Haddon House variety."

E. ASHWORTH, Esq., Wilmslow (gr. Mr. Holbrook), obtained an Award of Merit for Dendrobium × Leeanum, and Cattleya Mendeli, var. "Oakes Ames."

Messrs. H. LOW & Co., Enfield, exhibited Cattleya Gaskelliana, var. alba, for which they received an Award of Merit.

Mrs. S. WOOD, Glossop (gr. Mr. Gould), exhibited a good collection of plants, in which were some hybrid Cattleyas. (Bronze Medal.)

MAX ISAAC, Esq., Liverpool, exhibited a good plant of Lælio-Cattleya × callistoglossa. Vote of thanks.) *P. W.*

PLANT NOTES.

EUSTOMA RUSSELLIANUM.

THE sight of this beautiful plant at the Holland House Show and the following week at Vincent Square Hall (see fig. 26, p. 55), will perhaps induce gardeners more to undertake its culture. There is scarcely another plant of its colour that is at once and the same time so refined in habit, and distinct in the colour and form of its flowers. The plant lasts for several weeks in bloom if afforded cool treatment, shade from the mid-day sun, and afforded plenty of water; in fact, during very dry weather it may be stood in a saucer of water without injury. It is an annual, but does best if treated as a biennial; seeds being sown in sandy peat and leaf mould in August, or the seed may be germinated on a thin layer of soil laid on a porous red brick or tile, in a vessel of water so as to avoid the necessity of applying water overhead. The plant requires a very moist medium, and the seeds being of extreme fineness they may be readily washed out of the soil and lost by using the watering pot. Little artificial heat is required by the plant at any period of its existence, only a cold frame or pit from April to October, and a greenhouse during the remaining months of the year. It is advisable to sow the seeds at the time named above late in the month in the south and earlier in the north, so as to possess plants about 3 inches high at the commencement of winter. The seedlings must be pricked off as soon as they can be handled, much root disturbance being harmful at any stage of growth. I have had the best results from pricking out into thimbles, say two plants to each, afterwards throwing away the weaker one. In the ordinary case two shifts should be afforded, the second one early in October, which should be into a small 48, and preferable a bulb pot, a small quantity of good loam being added to the peat and leaf mould. The plants should occupy a shelf close to the glass, be afforded water with great care, and only when water is necessary, too much or too little being alike fatal to the plant. A keen outlook must be kept for aphis attacks, to which the plant is very liable, the fumigator being brought into use as soon as any aphides are observed. When new growth is apparent, say in March or April, the plants should be shifted into pots not less than 8 inches in diameter, unless very early bloom is required, when 6-inch pots are to be preferred. If the plants are intended for the larger sized pot, the point of the stem should be nipped off a week or two before the repotting is carried out. This stopping once gives an increase to the number of branches or side shoots, which, when tied outwards, make a plant 15 to 18 inches in diameter, and as each carries a number of blooms, the floral display is all the greater. *F. M.*

KEW NOTES.

LARKSPURS.

THE double-flowered forms of the common Larkspur, Delphinium ajacis, are amongst the most beautiful hardy annuals, and the earliest of the annual Delphiniums to flower. The dwarf German Rocket (Hyacinth-flowered) varieties are especially good. A feature of the Range Terrace for fully two months has been four large and two small beds, each devoted to a separate colour or shade of colour. The dense spikes are very showy. The seeds can be bought in mixed colours, or in separate packets of at least a dozen shades of colour: white, apple-blossom, buff, rose, brick-red, lilac, fawn, and several shades of blue. The seeds may be sown in autumn or spring, preferably in the beds or borders where they are to flower. Thin out the seedling when large enough, leaving them about 12 inches apart. The plants average 18 inches to 2 feet in height. They require much moisture at the roots. The present season has been rather dry for them in the London district. *D. D.*

CÆSALPINIA GILLIESII.

A FINE specimen of this very handsome leguminous shrub is flowering on the front of Museum No. 1. It is about 20 feet in height. A number of the growths near the top are carrying terminal racemes, each bearing from 30 to 40 rich yellow flowers, which have very conspicuous scarlet stamens, about three times the length of the corolla. If a position on a south or south-west wall can be given it, the plant will need little or no protection. The points of the plant at Kew are occasionally cut back by early autumn frosts, but this occasions very little harm. In the warmer parts of the country, notably Devonshire and Cornwall, it succeeds in the open. A good figure was published in the *Botanical Magazine*, tab. 4,006, under the name of Poinciana Gilliesii.

MARKET GARDENING.

BROAD BEANS.

THE general or consuming public seem to know little of the distinctions gardeners and seedsmen make in what are commonly known as "Broad" Beans. Possibly that ignorance is due to the undoubted fact that the Long Pod section seldom find their way into market for public sale. Market growers, so far as they grow Beans, seem to keep to the old Windsor type as the only one likely to suit customers, and it may perhaps largely be due to that, as also to the practice of gathering these Beans for market when they are somewhat old and the skins tough, that there is now only a very limited demand for them. Perhaps, too, with the increase of edible Green Pea varieties, enabling the ordinary consumer to have that delectable vegetable whilst young and fresh, at moderate prices, the old taste for Broad Beans has been obliterated. Certainly really good Marrow Peas can now be had almost anywhere in their season cheap and good. But it is a strange fact that whilst market growers seem thus to ignore Long Pod Beans, cottagers in every direction grow them largely and well. Since the introduction of the Seville type of Long Pod many years since, with its very long, although badly filled, pods, and those but sparsely produced, there has been effected remarkable improvement. On every hand we now see varieties of such excellence that not only do they crop abundantly, but the pods, almost longer than ever, are cramfull of beans; hence, as crops, the newer varieties are some of the most profitable it is possible to grow. I have of late seen in numerous cottage gardens and allotments, and, doubtless, many others have, abundant crops of very fine long pods borne on clean, robust, and healthy plants. A remarkable feature, having regard to the comparative dryness of the season, has been the rare occurrence of black aphis, and this on all sorts of soils. It is thus evident that, if in cottage gardens and on allotments Long Pod Beans can be grown so well, they can be equally well grown on a large scale in fields. Cottagers are, apart from their liking for these Beans, much encouraged to grow them by the prizes offered at the myriad of local cottage-garden shows held in the kingdom. Now and then there is a class for Old Broad Windsor. At Colchester, for instance, one gentleman gives special prizes for Windsors only of the true broad type, although the exhibits in that class make a poor display when compared with the fine, long, handsome pods in the Long Pod class. Broad Windsor pods carry two and, sometimes in an exceptionally good stock, three Beans in a pod, whilst the best of the Long Pods have seven equally fine Beans in each pod. These long pods are produced on plants quite as freely as are the shorter Windsors. Hence it is seen that as a matter of profit the latter are far more worthy of encouragement. There are many names to the Long Pod stock, though not greatly differing in character; Minster Giant, Leviathan, Exhibition, Mammoth, Prolific, and other appellations are listed. Probably one of the very best is the Giant Green Long Pod, because of the deep green colour of the Beans and their high flavour.

Beans for competition must be long, straight, fresh, well-filled, and all selected for a "dish," and must present an even appearance. When some 20 or more dishes, all very good, are staged in a class, judges have a difficult task before them to determine which is best. Seeing how popular this type of Bean is with the working classes, market growers perhaps might do worse, especially where they have stiff soils to grow them largely, and market the pods ere too old in bundles of, say, 25, selling the pods in that way by number rather than by measure or weight. The experiment should be worthy a trial. *A. D.*

FOREIGN CORRESPONDENCE.

GLADIOLUS.

For a long period I have grown, year by year, a quantity of Gladiolus—seedlings. The seeds are sown about the beginning of May in cold frames, and the bulbs lifted in autumn and planted the following year in the open ground, &c. Several years ago I noticed a plant that began to bloom in the seed bed, but the flower spike was killed by frost before it came to full development. I selected the bulb, planted it separately, and crossed the flowers with my best flowering sorts. I selected seeds from this cross carefully, and sowed them the following year about the middle of March. Several of these seedlings began to bloom about the end of August, and I obtained some ripe seeds of the plants. Last year the first flower opened on July 23, but this year the first flower has opened on July 12. By crossing and selecting the very best and most perfect seedling plants and seeds of these, also by new crossings with pollen of the different types of Gladioli, I have in my annual type of Gladioli not only a rich collection of colours, but also all the different types of Gladioli; also last year I noticed some plants with very widely-opened flowers similar to those of Amaryllis. The beds show a continuance of blooming from July until very late in the season; the last flowers were killed by frost. On many of the flower spikes are opened five to six flowers at once. The colours vary from white to yellow, flesh, rose and pink, bright red, cherry red, blood red to maroon and brownish red, &c. Last year I noticed a few with light and deep blue flowers. The individual flowers are of good size and form. *Frederick Roemer, Quedlinburg, Germany.*

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 21, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS

The *weather* was mostly fair to very fine in the central, southern, and western districts, and occasionally very fine in the north and north-west also, but scarcely a day passed without measurable amounts of rain in many parts of the latter regions. Local sea fogs were experienced on our south-western coasts during the earlier days of the week. Distant thunder was heard at Swarraton on Thursday.

The *temperature* was below the average generally, but above it in England N.E. and Ireland S. The highest of the maxima occurred on Wednesday in most districts; in England E. the thermometer rose to 82°, in England S. to 81°, and in the Midland Counties to 79°. In Ireland N. and Scotland N. the respective maxima were only 69° and 66°. The lowest of the minima were recorded, as a rule, late in the week and ranged from 39° in England S. and 40 in England E. and Scotland W. to 46° in Ireland S., and to 51° in the Channel Islands.

The *rainfall* was greatly in excess of the average in Scotland N. and considerably in excess in Scotland W.; in all other districts there was a deficit, the fall in England N.E. and the Midland Counties being particularly slight. On Tuesday and Wednesday an exceedingly heavy fall of rain occurred in the north-west of Scotland, the aggregate amount for the two days being as much as 4·9 inches at Fort William and 4·4 inches at Glencarron.

The *bright sunshine* was very deficient in the Channel Islands and England S.W. and slightly in England S., Ireland S., and Scotland N., elsewhere there was an excess. The percentage of the possible duration ranged from 47 in England N.E., 43 in England E., and 40 in the Midland Counties, to 27 in Ireland S., 24 in the Channel Islands, and 21 in Scotland N.

The *barometer* and *wind*.—During the whole of the week pressure was highest to the southward of the United Kingdom and low over the north-eastern parts of the Atlantic. Several shallow depressions passed eastwards across the northern districts of our Islands without having much influence on the force of the South-westerly and Westerly winds. The only serious disturbance was one whose centre lay near the Shetlands on Thursday morning. This was very deep for the time of year and caused fresh or strong Westerly gales on the northern coasts of Ireland and Scotland.

THE WEATHER IN WEST HERTS.

Dry and variable in temperature.—The first three days of the week were rather cool, but since then the weather has remained warm during the daytime, and on the warmest day the temperature in the thermometer screen rose to 79 degrees. On the other hand on two nights the exposed thermometer fell respectively to within six and three degrees of the freezing point, the latter a very low reading for the time of year. The ground is now about one degree warmer than is seasonable, both at one and two feet deep, and at the latter depth it is rather warmer than at any time this summer. No rain worth mentioning has fallen for a fortnight, and for a rather longer period there has been no measurable percolation through the bare soil gauge. The sun shone on an average during the week for seven hours a day, or for three-quarters of an hour a day longer than is usual at this season. Light airs have alone prevailed, while the direction of the wind has been almost exclusively some westerly point of the compass. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by 6 per cent.—*E. M., Berkhamsted, July 25, 1906.*

MARKETS.

COVENT GARDEN, July 25.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Asters, per dozen bunches	2 0	3 0
Calla æthiopica, per dozen	2 6	4 0
Centaurea cyanus, doz. bunches	2 0	4 0
— suaveolens	3 0	4 0
Coreopsis grandiflora, per doz. bunches	1 6	2 0
Carnations, per dozen blooms, best American varieties	1 6	3 0
— smaller, per doz. bunches	1 0	2 6
— Malmaisons	3 0	8 0
Cattleyas, per doz. blooms	9 0	12 0
Chrysanthemums, per dz. blooms	2 0	3 0
Eucharis grandiflora, per doz. blooms	2 6	3 0
Gardenias, per doz. blooms	1 6	2 0
Gladiolus, various, per dz. buchs.	9 0	12 0
— The Bride	3 0	4 0
— Brenchleyensis, per doz. spikes	3 0	4 0
Gypsophila elegans, per doz. bunches	2 0	3 0
— paniculata	2 6	4 0
Iris germanica, per bunch	0 9	1 0
Lilium auratum	2 0	3 0
— candidum, per bunch	1 6	2 0
— lancifolium, rubrum and album	2 0	3 0
— longiflorum	3 0	4 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality	9 0	12 0
Marguerites, white, p. dz. bunches	2 0	3 0
Marguerites, yellow, p. dz. bchs.	2 0	3 0
Mignonette, dozen bunches	2 0	3 0
Montbretia, dozen	3 0	4 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per doz. bunches	3 0	5 0
— Zonal, double scarlet	4 0	5 0
Poppies (Iceland), per dz. bnchs.	1 0	2 0
— Shirley	0 6	0 9
Pyrethrums, dozen bunches	1 6	2 6
Rhodanthe, per dz. bunches	2 0	3 0
Roses, 12 blooms, Niphetos	1 0	2 0
— Bridesmaid	1 0	1 6
— Kaiserin A. Victoria	1 0	2 0
— Caroline Testout	1 0	2 0
— C. Mermet	1 0	1 8
— General Jacqueminot	1 0	1 6
— in bunches, per dozen	3 0	6 0
— Liberty	1 0	2 0
— Madame Chatenay	1 6	2 6
— Mrs. J. Laing	1 0	2 6
— from the open, various kinds, per dz. bnchs.	2 0	5 0
Statice, per dozen bunches	4 0	6 0
Stephanotis, per dozen trusses	3 0	5 0
Stocks (double white) per doz. bunches	2 0	4 0
Sweet Peas, per doz. bunches	1 0	4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Asparagus plumosus, long trails, per doz.	5 0	10 0
— — medium, bunch	1 6	2 0
— — short sprays per bunch	0 6	0 9
— Sprengeri	0 6	1 0
Adiantum cuneatum, doz. bun.	4 0	6 0
Berberis, p. bunch	2 6	3 0
Croton leaves, per bunch	1 0	1 6
Cycas leaves, each	1 6	2 0
Fern, English, p. dozen bunches	0 9	1 6
Fern (French), doz. bunches	2 0	5 0
Hardy foliage (various), per dozen bunches	2 0	3 0
Hardy Grasses, per doz. bunches	2 0	3 0
Ivy-leaves, bronze	1 6	2 0
— long trails per bundle	1 0	2 0
— short green, doz. bunches	2 0	3 0
Moss, per gross	5 0	6 0
Myrtle, per dozen bunches	2 0	5 0
Smilax, p. dz. trails	2 0	5 0

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

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, per dozen	4 0	6 0
— larger	9 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	18 0	30 0
— variegated, per dozen	30 0	42 0
Asparagus plumosus nanus, doz.	9 0	12 0
— Sprengeri, doz.	6 0	8 0
— tenuissimus per dozen	8 0	10 0
Begonias (tuberous), per dozen	4 0	5 0
Bouvardias, per dz.	6 0	8 0
Calceolarias, yellow	3 0	4 0
Campanula isophylla alba, per dozen	6 0	8 0
— Mayi	6 0	8 0
Chrysanthemum segetum	3 0	6 0
Clematis, per doz.	8 0	9 0
— in flower	18 0	25 0
Cocos Weddelliana, per dozen	9 0	18 0
Coleus	3 0	5 0
Coreopsis	6 0	8 0
Crassula, hybrid, per doz.	6 0	9 0
— larger size	18 0	21 0
Crassula coccinea	18 0	21 0
Crotons, per dozen	12 0	30 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz	4 0	5 0
Dracænas, per doz.	9 0	24 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	7 0	10 0
— in small and large 60's	16 0	25 0
— in 48's, per doz.	4 0	10 0
— in 32's, per doz.	10 0	18 0
Ficus elastica, per dozen	9 0	18 0
— repens, per doz.	5 0	8 0
Fuchsias, per doz.	4 0	6 0
Heliotrope, per dz.	3 0	5 0
Hydrangea Hortensia, per dozen	8 0	18 0
— paniculata	6 0	18 0
Kentia Belmoreana, per dozen	12 0	18 0
— Forsteriana, per dozen	12 0	21 0
Latania borbonica, per dozen	12 0	18 0
Lilium auratum	18 0	21 0
— longiflorum, per dozen	12 0	18 0
— lancifolium, per dozen	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0

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

	s.d.	s.d.
Marguerites, white, per dozen	4 0	8 0
— yellow	15 0	18 0
Mignonette, p. doz.	4 0	6 0
Musk, Harrison's, per doz.	3 0	5 0
Pelargoniums (Zonals), per dozen	3 0	5 0
— Ivy-leaved, per dozen	5 0	8 0
— show	6 0	9 0
Petunias, double, per doz.	5 0	6 0
— 48's	4 0	6 0
— single	4 0	5 0
Rhodanthe, per dz.	3 0	6 0
Roses, per dozen	12 0	18 0
Selaginella, dozen	4 0	6 0
Spiræa japonica, per dozen	5 0	10 0
Verbena Miss Willmott, per doz.	4 0	6 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (English), ½ sieve	3 6	3 9
Apricots (French), per box	1 6	1 9
— ½ sieve	10 0	—
Bananas, bunch:		
— No. 1 quality	7 0	9 0
— No. 2 quality	6 0	7 0
— Extra quality	8 6	10 0
— Grants, per bunch	11 0	13 0
— Jamaica	4 6	6 0
— Loose, per dz.	0 8	1 3
Cherries (French),		
— boxes	1 0	2 0
— French, squares	2 0	3 6
— English, ½ sieve	5 0	12 0
— ½ sieve	3 6	6 0
— English pecks from	3 9	5 6
— Big. Napoleon	7 0	7 6
— (English), per ½ sieve	5 6	8 6
— Elton Hearts	7 6	9 0
— Big. Napoleon	8 0	13 0
Currants (English), red, per bundle	1 0	1 6
— ½ sieve (French)	6 0	7 0
— black, ½ sieve	7 6	8 6
— English pecks	3 0	3 6
— ½ sieve	4 0	4 6
— English, white, per gallon	1 6	2 0
Figs, per dozen	2 0	6 0
Grapes (English), Black Hambro, per lb.	0 10	1 6
— Alicante	0 9	1 4
— Colmars	1 0	3 0
— English, Muscat, per lb.	1 6	4 0
Gooseberries (English), ½ sieve	3 0	4 6
Greengages (French), p box	2 0	2 4
— Italian, baskets	3 3	3 6
Lemons:		
— Messina, case	10 0	16 0
— Naples, p. case	20 0	28 0
Lychees, per box	0 10	1 0
Melons, each	2 0	
Nectarines, English	2 6	12 0
Nuts, Cobnuts, per doz. lb.	8 0	—
— Brazils, new, per cwt.	45 0	—
— Spanish, p. bag	42 0	43 0
— Barcelona, per bag	24 6	—
— Monkey Nuts, per bag	18 0	—
— Walnuts, dried, cwt.	35 0	—
— Chestnuts, Italian, per bag	13 6	15 0
— Cocoa nuts, 100	10 6	15 6
Oranges, per case:		
— Murcia	16 0	18 0
— Jamaica	10 6	11 0
— Blood	9 6	11 6
Peaches (English), per dozen	2 6	12 0
— French, ½ sieve	5 6	6 6
— boxes	1 4	1 6
Pineapples, each	2 10	5 0
Plums (French), box	0 8	1 3
— Italian, baskets	10 0	—
Raspberries, per putt.	0 4	0 6
— tubs	16 0	—
— per peck	2 0	3 0
Strawberries, Kent, peck	2 0	4 0
— gallon	1 3	2 0
— punnetts	0 6	0 8

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Beans, Broad, per packet	0 6	—
— Broad (English), per bush.	2 0	—
— Home grown, per lb.	0 8	0 10
— Channel Island	0 8	0 10
Beetroot, bushel	1 0	—
Broccoli, sprouting, per bushel	1 6	1 9
— per doz.	1 0	2 0
Cabbages, Spring, per bag	1 6	—
— red, per bushel	1 6	2 0
Carrots, French pad	3 0	—
— per bag, unwashed	2 0	2 6
— new, per dozen bunches	4 0	—
Cauliflowers, per tally	3 0	10 0
Chow Chow, p. dz.	1 6	2 0
Cucumbers, dozen	2 0	2 6
Endive, per dozen	1 8	2 0
Horseradish, foreign, per dozen bundles	20 0	21 0
Leeks, 12 bundles	1 6	3 0
Lettuces, Cos, per dozen	2 0	—
Marrows, per doz.	3 0	4 0
Mint, per dozen	2 0	3 0
Mushrooms (house) per lb.	0 6	1 3
— Buttons, per lb.	0 9	1 3
Mustard and Cress, per dozen pun.	1 0	1 6
Onions (Valencia), case	6 0	6 6
— Egyptian, bag	4 6	5 0
— picking, per bushel	3 6	4 0
— French, ½ bag	2 3	—
— Spring, dozen bunches	1 0	—
Parsley, 12 bunches	1 0	1 6
— bushel	2 6	
Peas (French flats)	3 0	6 0
— English, per bushel	4 0	—
Potatos (new)	—	
— Channel Island Kidneys	0 2½	0 3
— Jersey, cwt	6 6	—
— St. Malo, cwt.	6 6	—
Rhubarb, per doz. bundles	2 6	—
Spring greens, per bushel	1 3	—
Salsafy, per dozen bundles	4 0	—
Tomatos:		
— English, per lb.	4 0	—
— small selected	3 0	—
— Seconds, per 12 lbs.	1 0	—
— French, per crate	3 6	4 3
Turnips, per doz. bunches	1 0	1 6
— bags	1 0	—
Turnip Tops, bush.	1 0	1 6
Watercress, per doz. bunches	0 6	

REMARKS.—English Peaches and Nectarines are cheaper owing chiefly to the large quantities that are now arriving daily. English Tomatos are cheaper and likely to continue so the whole week. Soft fruit is very plentiful. Trade generally is good. *A. H. Rides, Covent Garden, July 25, 1906.*

POTATOS.

Lincolns, 70s. to 85s.; Bedfords, 65s. to 75s.; Kents, 55s. to 100s. *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Although growers complain of bad trade, I find there is a good many plants going out of the market, though prices are low except for anything specially good. Large quantities of Fuchsias were sold this morning at 2s. to 2s. 6d. per dozen, but they would not have been good enough for the florists' trade. Verbenas, being very plentiful, realise only very low prices. It is difficult to give even approximate prices for plants just now, for many are anxious to clear out and finish up for the season. Growers say that it is owing to the cold spell we had late in the spring that they are later than usual this season. Pelargoniums are not quite so plentiful, but there are still some good plants to be seen. Zonal varieties are very good in white, scarlet, and salmon,

of the latter, Mrs. Lawrence is good, but King of Denmark is still the best. Double and single Petunias are good. Campanula isophylla alba varies, but there are some well-grown plants, as there are also of C. × Mayi. Hydrangeas hold out, but there is now little trade for them. Some fine Crimson Rambler Roses were in this morning, also plants of Dorothy Perkins; prices for these are lower now. Some well flowered plants of Lantanas make from 6s. to 9s. per dozen in 48 size pots, and some larger plants have been making 2s. 6d. each. Liliums include L. auratum, L. longiflorum rubrum and L. l. album. Marguerites continue to be plentiful and good, also Chrysanthemum segetum, Heliotropes and Coreopsis. Crassulas are now nearly over for the season. In foliage plants, Coleus and Kochia scoparia are plentiful. I hear from one grower that the seed he bought for K. scoparia proved to be a different plant to what we have known under this name, and quite worthless, but he got the right plant under the name K. trichophila.

CUT FLOWERS.

Heaps of flowers are now wasted, it is impossible to sell them at any price; the supplies of Sweet Peas, for instance, are far in excess of all demands. It is much the same with Carnations; small blooms were offered at 1s. to 1s. 6d. per dozen bunches, and quite good blooms were offered at 6d. per bunch of 12 blooms, but best Americans may make better prices. Roses are equally plentiful; nice blooms of Perle du Jardin were offered at the close of the market at 4d. per dozen or even less, and other sorts at proportionately low prices. Best Lily of the Valley is not abundant, but small blooms are cheap. Outside the market the blooms were offered at 2/1 per bunch this morning. Gladiolus Brenchleyensis and G. The Bride are very good. Montbretia crocosmæflora and Liliums continue plentiful. In hardy flowers Gaillardias, Coreopsis grandiflora, Gypsophila, Statice, Asters, &c., are over abundant. Lavender being now on the market, many of the hawkers give their attention to this instead of to ordinary flowers.

GARDENERS' DEBATING SOCIETIES.

DEVON AND EXETER GARDENERS'.—The fifteenth annual outing of this society took place on the 11th inst., when members and friends, to the number of 115, journeyed to Weston-super-Mare. A special steamer was chartered to carry the party to Mumbles Head for Swansea. After a short stay on the breezy promontory, the party proceeded to the grounds of Singleton Abbey, the seat of Lord Swansea, and were conducted round the gardens by Mr. Treblle, the head gardener, and others. Two particularly fine specimens of Sikkim Rhododendrons, R. Falconeri and R. barbatum, were noticed, the former being fully 20 feet in height, while the latter was nearer 30 feet in height. Many fine and well-trained Camellias were noticed in the avenue. The great market and other interesting features of the town were also visited. It was intended to visit Clyne Castle, but a delay owing to the steamer being late prevented this being done. *A. H.*

CROYDON AND DISTRICT GARDENERS'.—On the 18th inst., about 30 members of this society journeyed to Gatton Park, Reigate, the residence of Mr. Jeremiah Colman. Mr. W. P. Bound and his excellent staff of gardeners did everything they could to make the visit enjoyable. The first thing noticed on entering the park was a fine Elm avenue, known by tradition as bordering the Pilgrim's Way. A visit was paid to the Gatton Town Hall, situated in the park, and this in itself is a great attraction. The gardens were the chief attraction. Orchids are seen here in a superb collection. Seedling hybrids of Orchids are counted by the thousand. In the kitchen garden there is a giant trained specimen of Uvedale's St. Germain Pear measuring something like 90 feet from tip to tip.

GARDENING APPOINTMENTS.

MR. F. G. FREEMAN, for the past three years Foreman in the Gardens, Southgate House, and previously three years Foreman at Blackdown House, Haslemere, as Gardener to E. M. BRISTOWE, Esq., Great Baddow House, Chelmsford.

MR. W. W. SIMPSON, for the past 19 years Gardener to the late JOHN MERCER, Alston Hall, Grimsargh, Preston, as Gardener to Mrs. CROOK, Stanley Grange, Hoghton, Preston, Lancashire

MR. J. ELWORTHY, for the past 11 years Gardener to J. W. SMITH, Esq., J.P., Ivy House, North End, Hampstead, as Gardener and Bailiff to the same gentleman at Sparrow's Herne Hall, Bushey Heath, Watford, Herts.

CATALOGUES RECEIVED.

ENGLISH.

CLIBRANS, Altrincham and Manchester—Strawberries.

JAMES DOUGLAS, Edenside, Great Bookham, Surrey—Carnations, Picotees, Auriculas, Daffodils, &c.

CARTER PAGE & Co., 52 and 53, London Wall, London, E.C.—Dahlias.

F. C. EDWARDS, Warehouse Hill, Leeds.—Bulbs.

HERD BROS., Penrith—Bulbs.

SCHEDULE RECEIVED.

Prize List of the 3rd Joint Annual Agri-Horticultural Show of the STRAITS SETTLEMENT AND FEDERATED MALAY STATES to be held in the Raffles Reclamation Ground, Singapore, on Thursday, Friday and Saturday, August 16, 17 and 18, 1906

PLANT PORTRAITS.

LYCORIS INCARNATA AND L. SPRENGERI.—*Garden Week*, July 7.

ZANTEDESCHIA REHMANNI COCCINEA.—*Gardening World*, July 1.

ENQUIRIES AND REPLIES.

GOOSEBERRY MAY DUKE.—Can any reader tell me who raised this variety, and by what firm it was first distributed? *L. N., Germany.*

PRESERVATION OF APPLES.—Would it be possible with any degree of success to keep Apples in the same manner as recommended for Potatos in your last issue? *Somerset.*

ANSWERS TO CORRESPONDENTS.

*** EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BASIC SLAG ON LAWNS: *D. B.* Basic slag is especially noted for its encouragement of Clovers both on lawns and in permanent pastures. It would be advisable in your case to apply a dressing of sulphate of ammonia, 3 ounces per square yard, mixed with a little leaf-mould to facilitate even distribution. This may be put on at once, and if rain does not follow quickly, afford the lawn a copious watering with the garden-hose. The ammonia will obliterate the Clovers and encourage the Grasses. It will also destroy Moss. During the winter give a fair coating of leaf-mould, with which may be mixed some dried and finely-sifted fowl manure. A further dressing of sulphate of ammonia in the same proportions may be given in the month of March next year. An occasional watering of soot-water (water in which a bag of soot has been suspended) will greatly tend to keep the lawn green.

CUCUMBER ROOTS: *J. E. R. N.* The plants are badly infested with Eel-worm, which being so minute are invisible to the unaided eye. There is no cure for this pest, and the only advice we can give you is that for the next crop it will be necessary to adopt preventive measures. Every particle of the old soil should be taken away and sterilised by burning. The interior of the house should be thoroughly cleansed with a strong disinfectant or insecticide. When this has been done, endeavour to procure fresh soil from a source you have reason to believe is free from this pest, or if you cannot do this, then sterilise the soil by baking or steaming it before it is conveyed into the house.

IRIS: *W. L., Finchley.* The Iris is attacked by the well-known bacterial rot. Cut away all diseased portions and soak the healthy parts for half an hour in Bordeaux mixture before planting. As the soil in which the plants have been grown will be affected, it should be replaced by fresh soil, or better, the plants should be removed to a new locality. The infected soil should be sterilised with lime or kainit.

NAMES OF FRUIT. *J. W.* The Japanese Wineberry, Rubus phœnicolasius.

NAMES OF PLANTS: *J. T. S.* Pisum arvense (Field Pea).—*W. H. D.* Mentha Requienii.—*J. W., Cardiff.* 1, Malva crispa; 2, M. sylvestris var.; 3, Impatiens scabrida; 4, Dianthus arenarius; 5 and 6, Campanula rapunculoides; 7, Œnothera sinuata; 8 and 9, Linaria hybrids, impossible to name; 10 and 11, Eucharidium concinnum; 12, Aquilegia chrysantha var.; 13, A. Jaeschkani.—*J. W.* Picea ajanensis; 2, Lonicera alpressa, Silver Milkmaid Holly; 3, Ilex aquifolium argenteo medio picta; 4, Quercus imbricaria.—*Without name or number.* The tree is Cornus mas variegata; Sempervivum sp.; Antirrhinum; Galega; Delphinium. We can do no better for you in the circumstances.—*C. H. B.* Salvia Horminum, an herbaceous perennial plant.—*Sprenger.* Xysmalobium undulatum, Rhodesia.—*E. Rose.* Æschynanthus Lobbianus. The excrescences on the Eranthemum leaf appear to have come from the leaf itself, provoked either by the punctures of insects or by uncongenial atmospheric influences.—*W. M. A.* 1, Buddleia globosa; 2, Clematis Flammula.—*W.* 1, Crucianella stylosa; 2, Fabiana imbricata; 3, Eccremocarpus scaber.—*L. C.* 1, next week; 2, Rubus micranthus; 3, leaves only perhaps Saponaria officinalis; 4, next week; 5, Campanula rapunculoides; 6, Staphylea pinnata.—*W. B., Notts.* Why pack in the worst substance you can find—cotton wool? Your plant is the Summer Savory, Satureia hortensis.—*H. R. G.* 1, Veronica spicata white; 2, Erigeron speciosus; 3, Hibiscus syriacus; 4, Spiræa filipendula; 5, Aconitum variegatum; 6, Gnaphalum margaritaceum.—*T. H. B., Powderham.* 1, Pinus excelsa; 2, Sciadopitys verticillata; 3, Abies cephalonica; 4, Tsuga Brunoniana; 5, Abies brachyphylla; 6, Pseudotsuga Douglasii; 7, Abies magnifica; 8, Abies concolor; 9, Spiræa ariæfolia. Thank you for sending such satisfactory specimens.

NECTARINE FRUITS: *A. C.* Gumming is caused by a fungus called Coryneum Beyerinckii. This fungus winters on dead shoots and spurs, from whence the spores are washed on to the surface of the young fruit. All diseased portions of the tree should be cut off and burned.

PEA HAULM: *S. W. E.* The Peas have been injured by the Pea thrips (Thrips pisivora). The Peas and Pea-rods should be burned and the ground should be well limed. It is not safe to grow Peas or Beans on land that has borne a diseased crop in the previous season.

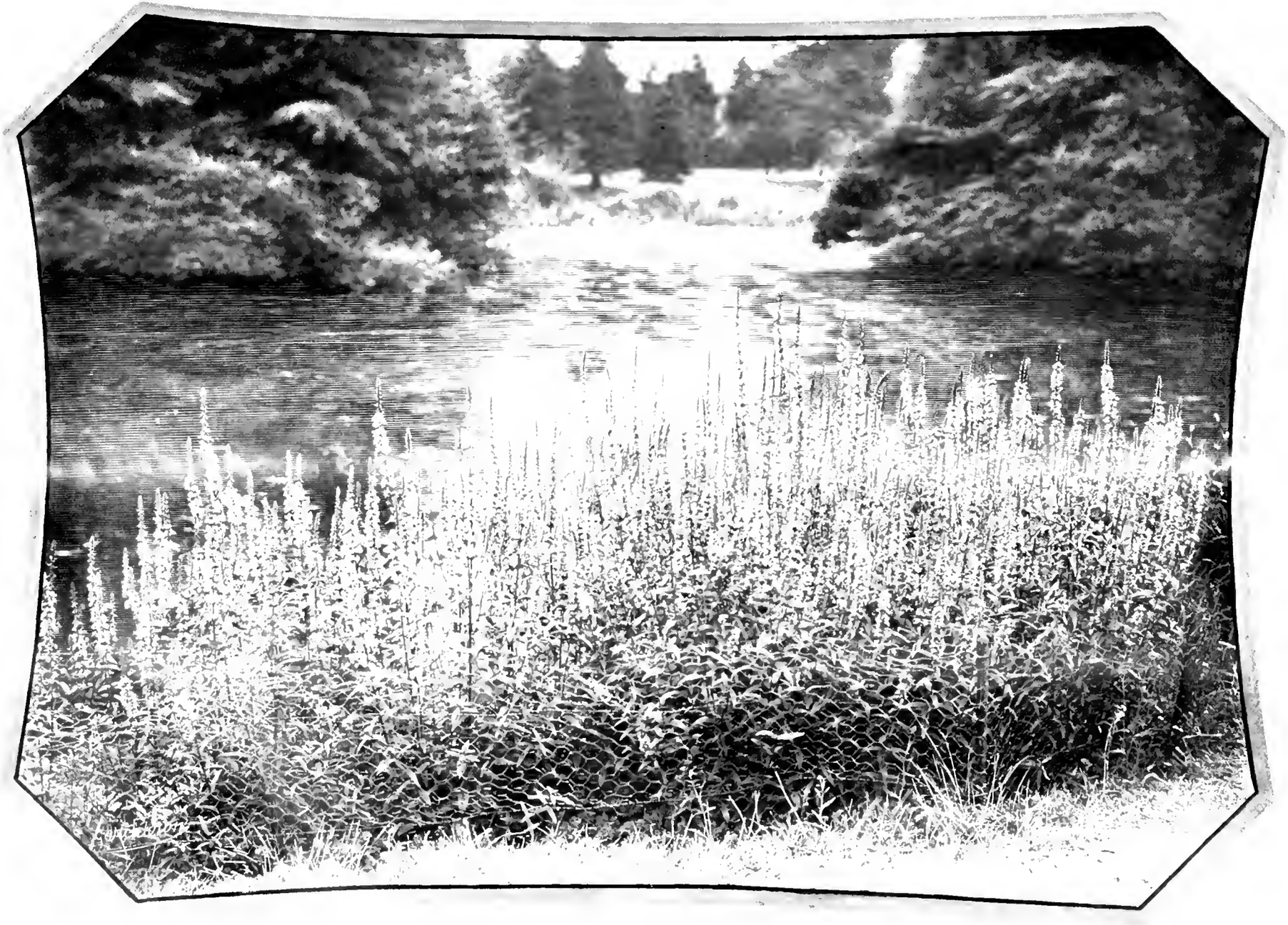
POTATOS FOR CERTIFICATE: *Murphy.* You should show the tubers to the Fruit and Vegetable Committee of the Royal Horticultural Society, and to the judges at the National Potato Society's show, which will take place in the autumn. The R.H.S. meetings are held fortnightly—that you may write to the secretaries we append their addresses: Secretary, Royal Horticultural Society, Vincent Square, Westminster, and Mr. W. H. Adsett, Halton House, Great Queen Street, W.C.

SOLANUM LEAVES: *W. C. L.* What you see on the under side of the leaves is not the result of insects or of fungous disease, but is analogous to the out-growths from Vine leaves, being generally the result of uncongenial atmospheric influences.

STRAWBERRY PLANT: *J. F.* The plants are badly attacked by the Strawberry leaf spot (Sphaerella fragariæ). The most effective cure is to cut off all the leaves a little later in the season and allow them to lie on the ground until fairly dry, then scatter a thin layer of straw over the bed and set fire to it. By this method all diseased leaves, also all spores lying on the ground, are destroyed and the plants will break into growth again vigorously and free from disease. Next spring spray the young leaves two or three times at intervals of a fortnight with a solution of potassium sulphide—1 ounce to 3 gallons of water.

VIOLAS: *C. A. B.* There is no specific disease present that can be attributed to either fungi or insects. The particular variety of Viola appears to be rather difficult to manage everywhere, and will not bear as much water as other kinds.—*H. A. S.* Botrytis vulgaris, a parasitic fungus, is the cause of the mischief, and its presence suggests too much moisture in the soil. Open out the plants and admit air to the surface of the soil. Water with a solution of permanganate of potash (= Condy's fluid) diluted to a pale-rose colour.

COMMUNICATIONS RECEIVED.—W. K. & Son.—M. Bernard, Caen.—W. J., Copenhagen.—Dr. Henry.—Dr. Franceschi, Santa Barbara.—C. T. D.—J. Hudson.—H. Güssow.—E. T. Cook.—C. R.—J. D. G.—Leopold de R.—W. W.—J. N. S., Nancee, Tal.—J. G.—L. Maurer, Jena.—W. B. H.—Madame Fedtschensko, St. Petersburg.—W. R.—W. B.—W. E.—A. K.—A. G.—M. L. de V.—Prof. Wittmack—E. P., Heidelberg.—W. S. M., Bombay.—F. E. W.—Justus Corderoy.—A. B., La Mortola.—J. H. G.—J. H. V.—V. A. Clark, Tucson, Arizona.—Midland Agricultural College.—H. J. V.—A. S.—W. E. G.—W. R. C., photo with thanks.—W. H. S., Southport, with photo, the latter will not reproduce well.—C. W. B., with thanks—A. A. F.—Mack, Yorks—Subscriber—W. E.—Arum Lily—J. Pettitt—J. G. Hawley—Anxious Reader—W. H. C.—J. H.—E. T. C.—E. W. & S.—Deutscher Pomologen Verein—Lady T. G., photo with thanks—Taylor, Somerset, next week—J. D. C., next week—H. V., next week—J. L. R.—R. V. & Son, Exeter—R. D., Brussels—The Earl of A.



PORTION OF THE LAKE IN THE ROYAL GARDENS, KEW, WITH PURPLE LOOSESTRIFE IN FLOWER.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,023.—SATURDAY, August 4, 1906.

CONTENTS.

ILLUSTRATIONS.

THE PROGRESS OF GENETIC RESEARCH.*

IT is just eight years since, on the hottest day of a very hot summer, the first Conference devoted to Hybridisation and Plant Breeding assembled at Chiswick. Looking back on that occasion we realise, what some of us even then suspected, that we were concerned in a remarkable enterprise. No such conference had taken place before, and our proceedings were of the nature of experiment. That definite results might come from that beginning we naturally hoped, but of those who endured the heat of that stifling marquee or inspected the plants exhibited in that tropical vinery, not one, I suppose, anticipated that in less than a decade we should have such extraordinary progress to record. The predominant note of our deliberations in 1898 was mystery. In 1906 we speak less of mystery than of order.

When formerly we looked at a series of plants produced by hybridisation we perceived little but bewildering complexity. We knew well enough that behind that complexity order and system must be concealed. Glimpses, indeed, of pervading order were from time to time obtained, but they were transient and uncertain. As casual prospectors we picked up occasional stray nuggets in the sand, but we had not located the reef, nor had we any machinery for working it if discovered.

Then came the revelation of Mendel's clue, with all the manifold advances in knowledge to which it has led. The most protean assemblage of hybrid derivatives no longer menaces us as a hopeless enigma. We are sure that even the multitudinous shapes of the Cucurbits, or the polychromatic hues of Orchids—though they may range from one end of the spectrum to the other—would yield to our analysis. Methods for grappling even with these higher problems have been devised. The immediate difficulties are chiefly of extension and application. Thus the study of hybridisation and plant-breeding, from being a speculative pastime to be pursued without apparatus or technical equipment in the hope that something would turn up, has become a developed science, destined as we believe not merely to add new regions to man's knowledge and power, but also to absorb and modify profoundly large tracts of the older sciences.

Terminology.

Like other new crafts we have been compelled to adopt a terminology, which, if somewhat deterrent to the novice, is so necessary a tool to the craftsman that it must be endured. But though these attributes of scientific activity are in evidence, the science itself is still nameless, and we can only describe our pursuit by cumbrous and often misleading periphrasis. To meet this difficulty I suggest for the consideration of this Congress the term "Genetics," which sufficiently indicates that our labours are devoted to the elucidation of the phenomena of heredity and variation, in other words, to the physiology of Descent, with implied bearing on the theoretical problems of the evolutionist and the systematist, and application to the practical problems of breeders whether of animals or plants. After more or less undirected wanderings we have thus a definite aim in view.

The Uses of Conferences.

The suggestive impulse to which this great progress is due came from without, but we take pleasure in the thought that the London Conference, and no less the second gathering at New York in 1902, did much to ensure the vigorous response which that long-awaited stimulus received. Of those who have taken a chief part in the advancement of "Genetics" several were with us then, and to the interchange of ideas which ensued may be ascribed much of the keenness and solidarity of purpose with which the Mendelian clue was followed out.

Conferences, like other stimulants, are, I believe, beneficial if not indulged in to excess. There are, however, special considerations which make it desirable that people with our particular interests should occasionally confer. Genetics constitute a subject of vast range. Each worker can have experience only of some small part. Nevertheless, the various phenomena are so closely interrelated that the centre of progress may shift rapidly from one part of the field to another. No one, therefore, can safely neglect the advances made in his neighbour's territory. Sciences follow the plan of developing organisms in that they pass through stages of little differentiation, when parts are still doing the work of the whole. In these early stages inquiry must be comprehensive. The worker must be wary of narrowness. While he is engrossed, and perhaps lost, in the idiosyncrasies of Orchids a discovery may be made concerning Peas, or it may even be Mice or Lepidoptera, which is just what the orchidist requires to clear away his own obstacles. Not even the time-honoured distinction between things botanical and things zoological is valid in genetics, and I notice with satisfaction that though we meet as guests of the Royal Horticultural Society, and though by the nature of the case plants figure most in the bill, yet animals are by no means excluded.

Now Conferences, especially those informal gatherings which are to make so pleasant a feature of our present programme, offer exceptionally good opportunities for the acquisition of knowledge of this comprehensive character. In the course of these meetings we shall gain information and suggestions that would not be attainable by months of search in the best ordered library.

Practice and Science.

There is another reason why the subject of genetics is particularly appropriate to the deliberations of a Conference. I find this reason in the fact that practical and scientific workers here have equal need of each other's aid. I hesitate to add that they have equal prospects of benefiting from the partnership; for while it is clear that the mind of the practical breeder is stored with the experience that the physiologist requires, it is less certain that the practical man would recognise that the scientific experimenter had much of great value to impart to him. To this question of the practical evaluation of genetic discovery I will again refer, merely for the present noting the fact that two quite distinct classes of workers are interested in this one class of fact, and that such meetings give a capital opportunity for them to compare experiences and take stock of each other's progress. For the success of our meetings it is essential that neither the practical nor the more strictly scientific aspect should unduly prevail to the exclusion of the other. There is then abundant reason for our coming together, and it is not without due sense of the importance of the occasion that I have accepted the great honour of presiding over your deliberations.

Progress of Genetic Enquiry.

In the few moments which I can now claim it is impossible to enumerate, and much more so to demonstrate, the genetic discoveries made by various workers here and abroad since last we met. Much of this information will be given in the papers communicated to the meeting. We have with us to-day several distinguished pioneers of these inquiries. We are looking forward to hearing them speak for themselves.

It seems to me therefore that I shall most fitly inaugurate these proceedings by attempting with the utmost brevity to state the position which genetic enquiry has now reached. The difference between the present and the former standpoint is well illustrated by taking two of the common ideas current among breeders and considering how each has gained in precision. The ideas I shall speak of are those conveyed by the terms "pure-bred" and "reversion." We have at last a critical appreciation of the physiological meaning of the term pure-bred as applied to a plant or animal. In a general way every breeder is familiar with the notion that some animals and plants are pure while others are not. We have long been accustomed to distinguish the two conditions in various ways, estimating purity sometimes by truth to parental type, sometimes by the uniformity of the offspring.

* An Inaugural Address at the Royal Horticultural Society to the Third Conference on Hybridisation and Plant Breeding, by W. Bateson, F.R.S., V.M.H., on July 31.

Neither of these tests, as we now know, is valid. An individual may be impure though not sensibly different from the accepted type of its breed, and though continued breeding from an impure individual will probably in the end reveal impurity, yet several generations may be produced in succession without any such indication appearing. For example, if, in a rose-combed breed of fowls that had bred true for generations, a single-combed bird were to appear, we might formerly have supposed either that one of the parents was impure, or that a new variation had occurred. We now realise that the introduction of the single comb may have taken place in some generation indefinitely remote, and that the appearance of that feature in a perceptible form is due simply to the fortuitous meeting of two germ-cells bearing the recessive character.

The Meaning of Pure-bred.

An individual is *pure-bred* when the two cells, male and female, from which it develops are *alike in composition*, containing identical elements or characters. No long line of like progenitors is needed to produce a pure-bred plant. A purple Sweet Pea may, as we now know, have been bred from white grand-parents exclusively and yet be pure to the purple character. Conversely, a white Sweet Pea may be a seedling produced by the self-fertilisation of a purple-flowered plant, and yet be pure-bred in respect of whiteness. It matters not how the parents are bred. They may be mongrels, as heterogeneous in composition as packs of cards; but if from the two packs *similar* cards happen to be dealt, the product of these two cards is pure. And as in the cards we may consider their attributes of colour, suit and number as distinct, so in the living thing we know that the several features or physiological characteristics may be treated as distinct in the cell-divisions by which the germ-cells are formed.

From this separability or distinctness of the characters it follows that an organism may be pure-bred in one respect and cross-bred in another. I need not remind my present audience that this conception of the unity and distinctness of characters provides the solid foundation which makes the science of genetics possible. Instead of regarding genetic purity as a vague and problematical state which might or might not be attainable by a long course of selection or fixation, we now know exactly what it is and how it is produced.

It is evident that this is a piece of knowledge which the practical breeder can turn to account. In future he will work with individuals of tested composition and avoid masses, thereby greatly simplifying the work of selection and fixation. It is no exaggeration to say that in this branch of industry the breeder can now perform in four years what formerly he could scarcely have effected in twelve.

Reversion.

Take similarly the idea of Reversion, which was formerly invoked to account for the unexpected or the unwelcome, much as our ancestors appealed to the powers of evil. Reversion, as usually met with, is one of two very definite but quite distinct things. Commonly these recurrences of features the breeder supposed he had bred out are merely due to the reappearance of a recessive character. Like the single comb spoken of above, these recessives never get the chance of appearing until they are introduced into the organism simultaneously from both sides of its parentage. A proof that any given reversionary character is merely a recessive, can be got at once by observing that the reverting individuals, on being fertilised with themselves or with their like, will breed true, and at least will not reproduce the types from which they were extracted.

But in addition to this very simple sort of reversion there is another of a more complex and much more instructive kind—that which is generally known as *reversion on crossing*. The most familiar illustrations have been seen in pigeons, fowls, Sweet Peas and Stocks. This reversion to an ancestral form, which may be indefinitely distant, can occur even when types of absolute purity are crossed together. Such reversionary forms, unlike those first considered, *never* breed true in the first generation—the F_1 generation, as we call it—but in F_2 generation there must in all ordinary cases be a small but definite percentage of reversionary individuals which are then pure-bred, and thenceforth able to breed true. As we now can prove, the reappearance of the ancient characteristic is caused by the meeting together of distinct elements long parted. In some unknown way these two factors "let each other off." Both factors must be present together in order that the feature in question may be developed.

The most complex illustration yet known of the effects of interaction between factors is provided by the Ten-week Stocks investigated by Miss Saunders; where, as we now know, two independent factors must co-exist in one plant to produce hoariness in the leaves; but even if these two are together present the leaves are still glabrous unless they are also associated with two other factors which are concerned with the production of flower-colour. How much further such analysis can be carried, it is impossible to surmise. We see, as yet, no reason for supposing that the rules of inheritance now perceived in the case of the simpler properties or structures of animals and plants are not applicable also to the features we regard as higher.

There is also a special kind of reversion on crossing made famous by Darwin's experiments on pigeons. Here the reversionary type is often not perceptible in F_1—the first cross-bred generation—but appears first in F_2 when the F_1 birds have been bred together. Such a phenomenon has been made the subject of experiment by Mr. Staples-Browne, and as his results clearly indicate, the reason why the reversionary character, viz., the black barring on a blue ground, does not appear in F_1 is that this feature is obscured by the dominant blackness introduced by one of the parents. When the factors which produced the blue meet in F_2 birds, which do *not* also contain black, the Blue Rock colouring is then evident.

Such a case as this last is only an apparent difficulty. Nevertheless, I should warn you that there is a large class of alleged reversions, of a kind more economically important than these, arising in ways not yet properly understood. I allude to the appearance of reversionary "rogues" among seed-crops, where circumstances preclude the idea that we have to deal with mere recessives, and make it *prima facie* unlikely that crossing is the provocative cause. For example, in the case of Peas, such reversionary and wild-looking "rogues" with *round* seeds have been shown me by my friend, Mr. Arthur Sutton, amongst crops of highly-bred wrinkled Peas. They are regarded as indications of that general degradation or degeneration which it is supposed would permeate all highly-bred stock if selection were suspended. Now, though it is certain that in practice if the crops were neglected these hardy and productive "rogues" would soon prevail and overwhelm the pure and more delicate strain, we are no longer content to regard their presence as inevitable. In order to cope with them we must find out exactly what they are. By the strict method of breeding from individuals under proper precautions we have now the means of doing this, and not till such investigations have been made need it be regarded as the inevitable property of any high-class variety to produce rogues. Though as to this special case I make no prophecy, modern observations strongly suggest the paradoxical conclusion that there is no such thing as general degradation or degeneration. These phenomena are due to specific causes, most commonly to nothing more obscure than insect-crossing, or to unsuspected mixture with an unrecognised variety. I mention these things simply to illustrate the fact that though the precise physiological nature of reversion may seem a matter remote from practical life, it is not remote at all, but closely bound up with very important industrial considerations.

I have said that reversion on crossing is due to the meeting of long-parted factors. Conversely variation is often due to the separation or elimination of factors. In other cases it is almost certainly, though perhaps not quite certainly, due to the addition of *new* factors. Genetic research has thus provided the first indication of the physiological process which results in the birth of a variation. The consequences of this knowledge to the systematist and to the science of evolution I will not now pursue. By following the clue which the discovery of "unit characters" has provided the long range of phenomena first grouped in an orderly fashion by Darwin in *Animals and Plants under Domestication* can at last be subjected to precise enquiry. The proximate significance of many of these mysteries is indeed already made out. Only those to whom that treatise has long been a kind of *De Occultis Naturæ Miraculis* are able to appreciate what the new knowledge means to biological science.

Practical Importance.

Now once more as to the practical importance of all this. The breeder has two main objects in view, he wants to *create* novelties and to *fix* them. In the second of these objects he can, as we have already seen, expect help from genetics. As regards the creation of new forms I must not speak so confidently. Nevertheless, there is a valuable class of novelties which are really novel only in so far as they recombine pre-existing characters of known types. Such re-combinations, say of hardiness with desirable qualities of colour or shape, or of size or free-flowering habit with brilliancy, or of colours such as red and cream-yellow, belonging to distinct physiological systems, may be of great value to the breeder. If in the majority of such cases no infallible prescription can yet be given to produce the desired result, Mendelian knowledge often indicates the course which is most likely to succeed. I am not straining the truth when I say that the right course in numbers of instances is one which an operator guided by common sense alone would have studiously avoided.

But apart from any specific claim as to the immediate economic value of genetic research, let me once more take more general ground, and without fear of contradiction I will insist on the truth that with a critical knowledge of the meaning of "pure-bred" and "reversion" a new era begins. To confusion and guess-

work, knowledge and orderly experiment succeed.

The conclusions I have named and others like them have been arrived at by statistical observations of a somewhat arduous kind. An account of these technical proceedings scarcely falls within the scope of this address. I must, however, dwell for a moment on the fact that the processes of "segregation" which bring about the outward and visible facts of heredity are in essence *symmetrical* processes. It has long been known, ever since the beginning of microscopical research, that cell-division often appears to be a symmetrical process. We have now learnt that this visible symmetry is in the main a true representation of the qualitative symmetry by which the qualities or characters are distributed among the developing germ-cells. No one can yet declare that plans of distribution following some higher order of complexity do not exist; but analysis of the simple cases will keep us employed for many a year, and not till the symmetrical phenomena of heredity have been exhaustively explored can we contemplate a further expedition into the unknown. Of one thing at least we may be sure: that heredity is a regular phenomenon, in many of its manifestations simple, and amenable to experimental methods of research. To have said as much in 1898 would have been only to make a pious ejaculation of personal faith. Before our meeting in 1902 the change had begun. We could deal with simple cases involving only two types of individuals. When a family contained on an average three of one type to one of another, or equal numbers of both, we knew what the fact meant. Now we can deal with much more difficult cases. The number of types does not trouble us. We understand the ratios 9 : 7, and 9 : 3 : 4, 27 : 9 : 28, and many variations on these simpler themes. All these can be shown to be produced by the chance combinations of germ-cells, or "gametes," produced by symmetrical divisions.

The Units—their nature.

But ever in our thoughts the question rings, what *are* these units that bring all this to pass, which in their orderly distributions decide so many and perhaps all of the attributes or faculties of each creature before it is launched into separate existence? Colour, shape, habit, power of resistance to disease, and many another property that might be named, have one by one been analysed and shown to be alike in the laws of their transmission, owing their excitation or extinction to the presence or absence of such units or factors. Upon them the success or failure of every living thing depends. How the pack is shuffled and dealt we begin to perceive: but what are they—the cards? Wild and inscrutable the question sounds, but genetic research may answer it yet. Substances which excite disease or confer resistance, which preserve health or produce deformity have been extracted, and it may not be more impossible to determine the nature of the two critical factors which excite hoariness or colour in a plant.

It is not only the breeder of animals or plants who is concerned to know the truth about heredity. The results of genetic research affect every branch of physiological or sociological inquiry. Too long has science been content to explore the specialised and outlying functions of the body and to neglect the primary, central and all-controlling function of heredity, on which the rest depend. Such neglect manifestly arose from the curious delusion that the laws of breeding were untraceable. With the Mendelian renascence that dark age has ended.

As a hopeful sign it may be noticed that in the United States the Carnegie Institution has lately equipped a station for the experimental study of Evolution. In England, where through Darwin's genius the study of evolution first became a reality, the country in which the art of breeding has for ages occupied a place unequalled in other lands, no such opportunities exist. The pursuit of these objects demands facilities of a special kind such as neither technical colleges nor the laboratories of the Universities are able to supply. Sooner or later perhaps an effort will be made to provide equipment of this kind in England. Whenever such an institution as that I contemplate comes to be designed, let it not be tied down to the pursuit of directly economical results. When someone says to me—"But can't you breed a Derby winner, or do something useful?" the reproach does not disturb my equanimity. In parenthesis let me remark that though in the attempt to discriminate among animals all good enough to win, science may be as much at fault as common sense, yet it would not surprise me if science were to devise a way of breeding even race-horses which would not produce about a hundred wasters for one fit to win—and yet I understand that common sense remains content with that rather modest attainment after two centuries and a half of steady trying.

The great advances in the application of science have generally become possible through discoveries made in the search for pure knowledge. Mendel's incomparable achievement, with all that it imports both to science and to practice, was brought about by the resolute determination to get to the bottom of one particular problem in hybridisation, a problem too without any very obvious practical application, and we may rest assured that in no other spirit can natural knowledge be more profitably pursued.

NEW OR NOTEWORTHY PLANTS.

EREMURUS × MICHELIANUS.

M. Correvon sends us a specimen of a hybrid Eremurus, which originated spontaneously in the garden of the late M. Marc Micheli, near Geneva. Its parents are assumed to have been E. Warei and E. Bungei. The leaves are linear, very acute, about 68 cent. long (say 27 inches), 12 mill. (½-inch) broad, three sided, deeply channelled on the upper surface, acutely prominent beneath glaucous green, minutely denticulate at the edges. The flower scape is described by M. Correvon as flexuose. It measures about 2 metres (6 to 7 feet), and is surmounted by a many-flowered raceme, which attains an additional height of a yard and upwards. The bracts are membranous, with a broad base tapering upwards into a very long acumen. Pedicels spreading on all sides, thinly disposed, about 1 inch long, slender, brownish. Flowers about 2 cent. (¾-inch) across; perianth segments oblong obovate, primrose-yellow, channelled in the centre on the upper surface, with a prominent reddish-brown stripe on the outer surface, stamens 6, filaments slender, yellow, glabrous, equalling the perianth segments; anthers orange-coloured; ovary globose, obscurely lobed, three-celled, with numerous large wedge-shaped seeds attached to the axile placenta. Style simple, rather longer than the stamens, stigma minute.

The flowers began to open on June 20, and lasted about a month.

M. Correvon suggests that the name of M. Micheli should be attached to this plant, and that it should be named E. × Michelianus.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(*See Tables and Summaries, ante, pp.* 64-70.)

0, SCOTLAND, N.

Orkneys.—A fortnight of very severe weather, beginning on May 20, spoiled all the fruit crops. *Thos. MacDonald, Balfour Castle Gardens.*

Sutherlandshire.—The cold, wet month of May, and the frosts which were intermittent even until the end of June, were extremely injurious. The weather in July was exceedingly dry. Our soil is of heavy loam, overlying clay. *John McIver, Skibo Castle Gardens, Dornoch.*

1, SCOTLAND, E.

Aberdeenshire.—Black Currants and Raspberries are very fine crops. Strawberries were only average. Gooseberries were almost a failure. The weather in May was disastrous, yet I never saw the trees look better than they did when in flower. *James Grant, Kildrummon Gardens, Kildrummon.*

—— The fruit crops in this district are almost a failure, owing to the continuation of frost all through April, followed by an exceedingly cold and wet May. The soil is of a heavy nature, and the subsoil is clay. Crops of all sorts are about ten days later than in an average season. *John Brown, Delgaty Castle Gardens, Turriff.*

Banffshire.—The cold winds and frosts of May 16 and 17 caused much damage to fruit crops in this district. *A. Morton, Cullen Gardens, Cullen.*

Clackmannanshire.—Rain and cold winds are worse for fruit blossom than is frost. Last year I had an Apple tree that was covered with blossom, but it rained continually when the flowers were open, and the petals became stuck to each other, no pollen was shed, and hence there was no fruit. In cold, wet weather the stigma seems dull and lifeless. *A. Bruce, Alloa Gardens, Alloa.*

East Lothian.—An abnormal amount of rain—7 inches—fell from May 1 to June 1 inclusive. Apple blossom produced no pollen. Strawberries failed through want of rain early in July. It is the worst fruit season since 1880. The soil is light, contains much gravel, and is deficient in loam. *R. P. Brotherston, Tynninghame, Prestonkirk.*

Fifeshire.—I attribute the cause of the failure of fruit here to the very cold and inclement weather we had when the trees were in bloom, and to the late frosts which stripped some of the trees after the fruits had set, especially Black Currants and Morello Cherries. *Chas. Simpson, Wemyss Castle Gardens, East Wemyss.*

Forfarshire.—There was a good show of fruit blossom of all kinds in spring, but the weather conditions were not favourable for a good set. Pears are almost a failure, while Apples are a light crop. Strawberries have been much affected by the drought, and the crop here is a small one. Small fruits are also scarcer than usual, with the exception of Raspberries. *W. McDonall, Brechin Castle Gardens.*

—— The almost entire failure of most of our fruit crops this season we attribute to cold winds when the trees were in blossom. The soil is a light loam, over a subsoil of sand. *F. Wilson, Glamis Castle Gardens, Glamis.*

—— In this district summer pruning is generally done about the middle of July, commencing with Cherries and Plums, following up with Pears and Apples. Results are good. The cold, wet, and sunless weather, with prevailing frosts during the night, throughout the month of May, had much to do with the failure of the fruit crops in this district. Along the coast the soil is of a light, sandy loam, with subsoil of gravel and sand; inland, the soil is of a heavy loam with clay subsoil. *William Allison, The Gardens, Seaview, Monifieth.*

KINCARDINESHIRE.—There is no doubt in this district what has adversely affected this season's fruit crop; it was severe frosts and cold winds, accompanied by snow and sleet, when the trees were in blossom. We had 10° of frost twice in May. The soils on Deeside are mostly light on a gravel bottom. *John M. Brown, The Gardens, Blackhall Castle, Banchory.*

MIDLOTHIAN.—Fruit trees here of all kinds had an extra quantity of blossom. Severe frosts about the middle of March, and later, completely destroyed the Plum and Gooseberry crop. Much wet weather and very low night temperatures during April and May have caused the worst crop of Apples and Pears there has been for many years past. Strawberries, Raspberries, and Currants are average crops. The soil is light and sandy, the subsoil being of gravel. *James Whytock, Dalkeith Gardens, Dalkeith.*

6, SCOTLAND, W.

DUMFRIESSHIRE.—The blossom was abundant, but late. The actual frost was not severe, and no damage could be traced to its direct agency, but the low temperature, the absence of sunshine, and the almost standstill of vegetation during the flowering period accounts for the big gap in the Plum crop. The Apple crop is much better, the weather having been bright and cheerful during the flowering period. The following varieties have a full crop, and generally give us the best results: Peasgood's Nonsuch, Ecklinville Seedling, New Hawthornden, Lord Suffield, Stirling Castle, Lane's Prince Albert, Lord Grosvenor, Tower of Glamis, and Duchess of Oldenburgh. No amount of pruning has rendered Gascoyne's Seedling or Prince Bismarck suitable for this district. Newton Wonder, Schoolmaster, Christie Manson, Byford Wonder, and Alfreston are still in the experimental stage with us. The soil is clay-loam, with a heavy clay subsoil. *John Urquhart, Hoddom Castle Gardens, Lockerbie.*

STIRLINGSHIRE.—Late frost and cold east winds in May account for the failure of the hardy fruit crops. We had 15 degrees of frost in the last week in May. The soil is a light, sandy loam; subsoil clay. *Alex. Marshall, Ballikinrain Gardens.*

WIGTOWNSHIRE.—The dry, harsh winds and frequent frosts in April destroyed the prospect of crops from Plums, Peaches, and Apricots. Late Apples are still more disappointing, for there having been no frost during the flowering period good crops were expected. Wet, dull weather for days together probably had an adverse effect upon the blossom, and prevented it setting. The soil is a good working loam, and the subsoil gravel or sand. *James Pay, Galloway House, Garlieston.*

2, ENGLAND, N.E.

DURHAM.—The late spring frosts and cold east winds when the trees were in blossom told seriously against the fruit crops. We had a splendid promise, the blossoms big abundant, but on May 23 we had from 6 to 8 degrees of frost. *James Noble, Woodburn Gardens, Darlington.*

—— The fruit crop generally was seriously affected by sharp frosts almost nightly up to May 20, also by heavy showers of hail and snow up to a very late date. *James MacIlar, Smeaton House Gardens, Howden-le-Wear, R.S.O.*

YORKSHIRE.—Bloom was abundant and promising, but except that of Apples, Strawberries, and Raspberries, all was destroyed by the general low temperatures throughout May. The soil here is moderately good loam above Yorkshire grit. *J. Simpson, Studfield, near Sheffield.*

—— In the latter part of April and early part of May, we had a long spell of frost and hail, with cold winds, which ruined a large quantity of the blossom, which before was very promising. Gooseberries are the worst crop I have had for some years. Apples are good, also Black and Red Currants. Strawberries have suffered from drought. *A. E. Sutton, Castle Howard Gardens, Welburn.*

3, ENGLAND, E.

CAMBRIDGESHIRE.—The severe frosts in April and May and the cold, north-east winds practically ruined the fruit crops here this season. *R. Alderman, Fabraham Gardens, Cambridge.*

ESSEX.—Undoubtedly the cold east and north-east winds in late spring were responsible for the almost complete failure of Plums. These, at the time of the cold winds, were in full bloom, and presented the appearance of having been scorched. Fortunately the dryness of the atmosphere and protection of walls saved Apricots, Peaches, and Nectarines. The early blooms of Strawberry, although not open, were destroyed here. *Arthur Bullock, Copped Hall Gardens, Epping.*

—— The frosts in April and in the early part of May were the cause of the almost total failure of the Pear and Plum crops in this district. The soil here is generally a sound loam, resting on a clayey subsoil. *H. W. Ward, Lime House, Rayleigh.*

LINCOLNSHIRE.—Sharp frosts and cold N. and N.E. winds killed many of the blossoms before they had set, and those that had set being weak, owing to such a wealth of blossom, could not withstand the unfavourable weather, and fell off.

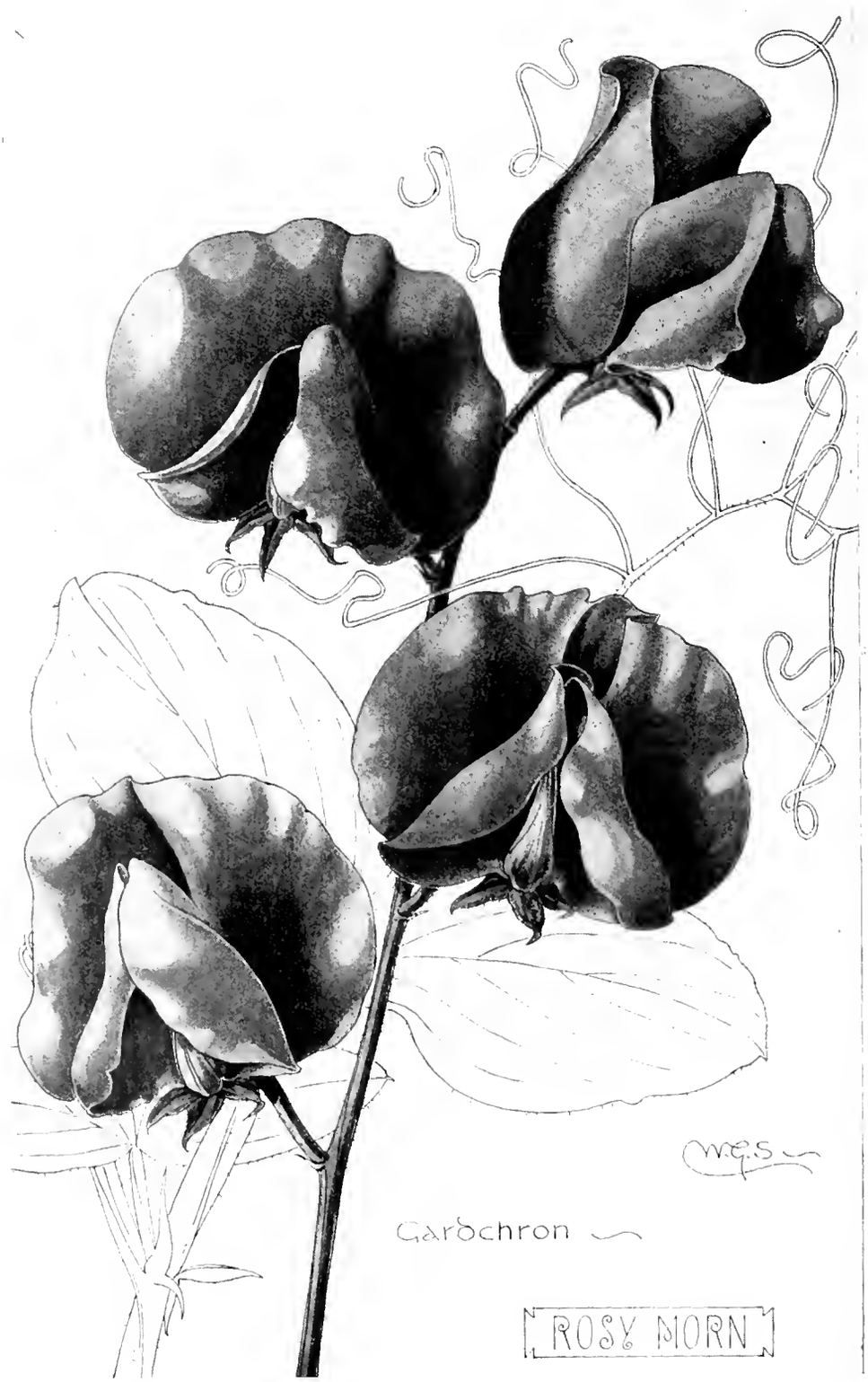


FIG. 34.—SWEET PEA "ROSY MORN," WHICH OBTAINED AN AWARD OF MERIT AT THE R.H.S. MEETING ON JULY 17 WHEN SHOWN BY MESSRS. H. CANNELL AND SONS; COLOUR REDDISH-ROSE. (See page 54.)

The soil is a brown loam on blue clay or ironstone. *H. Virden, Harlaxton Manor, Grantham.*

NORFOLK.—The partial failure of the fruit crops this year is due to the exceptionally severe spring frosts. In many places Strawberries and Apples were partly ruined before the flowers even opened. Large quantities of the latter dropped on account of drought, which, coupled with cold winds and frost, has caused most vegetation to be unsatisfactory. Pears, Plums and Black Currants, except in one or two favoured positions, are almost a complete failure. Rarely was there such a wealth of blossom as prevailed this season, but some growers complain of the ravages of sparrows and bullfinches among the Apple-buds and those of small fruits The soil and subsoil vary greatly, but for the greater part the soil is sandy, overlying chalk or gravel. *E. C. Parslow, Shadwell Court Gardens, Thetford.*

—— The fruit crops have suffered greatly from east winds, late frosts, and mildew Apples are a partial crop, and the fruits are still dropping, being badly affected with moth and mildew. Strawberries were a very good crop, but badly mildewed, the Laxton and Royal Sovereign faring worst. Raspberries are a grand crop, especially the variety Superlative. Gooseberries suffered in the young state when exposed to the east winds and frosts. Pears are badly mildewed. Early Potatos are turning out grand, and late varieties are looking well. In some places the second earlies are infested with a new disease, to be seen in the curling of the leaves, and turning rusty, with only very small Potatos at the roots. We have a mixed soil, with gravel subsoil. *J. W. Braithrook, The Gardens, Ketteringham Park, Wymondham.*

SUFFOLK.—Dry weather has most affected our fruit crops this season, as we had practically no rain in April or May. Pears and Apples set well, but dropped later in large quantities, owing to the drought. The soil is mixed, some being very heavy, and others the reverse; the subsoil is of gravel and sand. *Thos. Simpson, The Gardens, Henham Hall, Wangford.*

(To be continued.)

OUR PORTRAIT SUPPLEMENT.

THE portraits which we are privileged to lay before our readers in this issue are those of several who are participators in the Hybridisation Conference as active members, as guests or as hosts.

The President is Mr. WILLIAM BATESON, of Cambridge, a thinker and investigator who has been foremost in reducing to law and order the chaotic mass of detail relating to variation and heredity. A keen observer in well-trodden fields of activity, he has also broken new ground by his patient investigations. He has dealt with the question of "Sports" or discontinuous variations, he has not only rescued from oblivion the remarkable experiments and inferences of Mendel, but has greatly extended them by applying them to poultry as well as to Chinese Primroses, Sweet Peas, Stocks and other plants. Whereas before his time we had to rely on casual observation and haphazard experiment, we have now learnt that these matters may be co-ordinated, and reduced to system and numerical proportion. The vague and indefinite has, through his experiments, become to a large extent and in an ever-increasing degree replaced by what is fixed and capable of demonstration. If we have had to unlearn some of our cherished convictions and abandon some of our shibboleths, what is that in comparison with the establishment of the truth and the influx of light in previously dark places?

M. MAURICE DE VILMORIN, the brother of the ever-lamented Henry, is one of a family that has accomplished so much for the benefit of humanity in experimental horticulture that he needs no introduction to our readers. The arboretum at Les Barres formed by M. MAURICE DE VILMORIN is one of the richest and most remarkable of its kind. His relations with Chinese explorers and missionaries has enabled him to get together a most interesting selection of plants. To him has fallen the honour of being the first in Europe to flower the Davidia, of which an illustration was given in our columns in June 2 last, p. 346, M. DE VILMORIN has raised some hybrid Roses, crosses between R. rugosa and R. foliolosa.

LEOPOLD DE ROTHSCHILD, Esq., C.V.O., comes of a family renowned, amongst other things, for their patronage of science and art, including horticulture. Both at Ascott and at Gunnersbury, Mr. DE ROTHSCHILD exercises his tastes for gardening, and the members of the Conference who availed themselves of his hospitality at Gunnersbury on Friday had the opportunity of seeing one of the most interesting and remarkable gardens in England, the more remarkable as it is in immediate proximity to London and Brentford, not the most favourable localities for the pursuit of gardening.

Prof. JOHANNSEN, of Copenhagen, demands cordial recognition at our hands, not only for his researches on heredity, but also for his fruitful experiments on the action of ether in first retarding growth and then in promoting the flowering of plants. What the refrigerating chamber does with some plants, the ether treatment does for others. M. JOHANNSEN occupies a very high position among those who, by their scientific experiments, have promoted the progress of modern horticulture. M. JOHANNSEN, in a recent work, shows a weak place in most experiments quoted in favour of "selection." He proves that to obtain really new and stable varieties plants should not be chosen which show a particular characteristic most clearly, but the descendants of one or more races that have possessed from the beginning the qualities which it is sought to intensify by selection should be isolated for observation. Selection, properly so called, consists of the wholesale selection of a number of plants belonging to different generations. Cultivation by pedigree, by isolating each year the descendants of a plant of pure origin, accompanied with the exact determination of the variation of characters, is the only rapid and sure way of discovering aberrant and new, sometimes better, forms which occasionally occur in cultivation.

M. A. PEETERS, of Brussels, one of our guests, finds an appropriate place in our columns as the raiser of various hybrid Orchids. Among the better known crosses raised by M. PEETERS are:—Cattleya Mrs. Myra Peeters, one of the finest, pure white Cattleyas obtained between two albinos—C. Gaskelliana alba and C. Warneri alba, and therefore interesting as it proves that abnormal characters such as albinism may be perpetuated by seeds, Odontoglossum × Lambeauianum vars., illustrated in the *Gardeners' Chronicle* November 4 and December 23, 1905; Cattleya × Fabia Marie de Wavrin, Lælio-Cattleya × Herode (L.-C. elegans × C. O'Brieniana); Lælio-Cattleya × Stepmanni, Lælio-Cattleya × Wrigleyi (L. anceps × C. Bowringiana). This is also raised by Messrs. VEITCH.

M. NÖEL BERNARD, of the University of Caen, is an investigator whom we rejoice to welcome among us. His researches into the "symbiosis" or co-operative action observable between certain fungous moulds and various Orchids, opens up a new and most interesting branch of study, the practical importance of which needs no pointing out. If we know now why the culture of some Orchids is relatively easy, whilst others have so far taxed the resources of our cultivators, it is M. BERNARD'S researches that have furnished a clue to what was previously mysterious.

Prof. PFITZER, of Heidelberg, is well known among botanists and Orchid-lovers for his valuable work in the classification of Orchids. Former students have been content to base their researches mainly on the differences in floral structure, but Prof. PFITZER has shown that very valuable points of distinction are to be found in the mode of growth of the living plant. In this manner he commands the sympathies of the Orchid-grower as well as of the botanist.

PHILIPPE DE VILMORIN. What shall we say of him, but that he is the son of his father, the late HENRY DE VILMORIN, who was so well known and so much beloved among us? In taking part in this Conference he only does what his father did before him, and indeed in experimental horticultural generally, PHILIPPE DE VILMORIN worthily carries on the traditions of his house.

Prof. WITTMACK, till lately the secretary of the Prussian Horticultural Society at Berlin, has had a long and honourable career as a botanist He has devoted his talents to the elucidation of many problems in horticultural and agricultural science. He has visited the United States with the same objects in view, and is deservedly held in the highest esteem among his colleagues

There are many who took part in the former Conference whose portraits are not repeated on this occasion, though we are happy in the knowledge that we have them still working among us, nor have we thought it necessary to repeat the portrait of the president of the Royal Horticultural Society, who has done so much to promote the success of this gathering.

ROTHAMSTED INVESTIGATIONS.*

The memoranda of the Rothamsted agricultural experiments issued yearly by the Lawes Agricultural Trust, mainly for the use of visitors, has this year been entirely altered in character and usefulness; it now assumes a valuable brochure, not only as a "guide to the experiments," but a handy manual for those who undertake the teaching of agriculture.

The work includes many illustrative diagrams and much important matter taken from Mr. A. D. Hall's (the director) exhaustive book of the Rothamsted experiments.

The story of the invaluable work done at Rothamsted has been so frequently told that we need give but a brief resume of the new brochure before us.

The experiments were commenced by the late Sir John B. Lawes, Bart., in 1843, on a soil which is described as a rather heavy loam resting upon chalk, capable of producing good Wheat when well manured; not sufficiently heavy for Beans, but too heavy for good Turnips or Barley.

The average produce of Wheat in the neighbourhood is about 22 bushels per acre, Wheat being grown once in five years. The rent varies from 20s. to 26s. per acre, tithe free. The soil is fairly uniform in the different fields, and consists essentially of a heavy loam containing little coarse sand or grit, but a considerable amount of fine sand and silt and a large body of clay. In consequence, the soil has to be worked with care, becoming very sticky and drying to impracticable clods if moved when wet. It "runs together" if heavy rain falls after a tilth has been established, and then dries with a hard, unkindly surface, these difficulties being much exaggerated on the plots which have been farmed for a long time without any supply of organic matter in the manures.

AGDELL FIELD. CROPS GROWN IN ROTATION.

This field was put under experiment in the year 1848, and is farmed on a four-course rota-

* Rothamsted Experimental Station. Guide to the Experimental Plots. 1906. John Murray, Albemarle Street, W.

tion of Swedes, Barley, Clover (or fallow), and Wheat. It is divided into three main portions, one of which has received no manure; the second, phosphates and potash; and the third, phosphate, potash, and nitrogen. The manures are applied for the Swedes only, the other three crops of the course being grown without manure.

In this field the long-continued cropping on the portion without manure affects the successive crops in rotation very differently. The Swede crop is least capable of growing in the impoverished soil, and is reduced to less than a ton per acre; the Clover and Barley crops are also small, but the deep-rooted Wheat crop is comparatively little affected, and yielded as much as 19·6 bushels per acre in 1903, the 56th year without any manure. With phosphate and potash, but without nitrogen, the Swedes continue to give a fair crop; the Barley and Wheat are but little better than on the unmanured plot, while the Clover grows almost as freely as on the completely manured plot. When the portion allotted to Clover grows a good crop, the residues of the Clover have a very beneficial effect upon the succeeding crops of the rotation; the Wheat is increased by something like 15 per cent.; the roots (although manured) are slightly better, and the Barley following the roots still shows the value of the preceding Clover. No such residue seems to be left behind by the Bean crop whenever that is taken in the rotation instead of Clover.

On the unmanured portion the Clover shows no effect on succeeding crops, because there its growth is too small to leave behind any residue of nitrogen.

BARNFIELD. MANGEL WURZEL.

The experiments upon Mangels began in 1876, but the land had been receiving similar manures for other root crops since 1856.

The value of farmyard manure in growing Mangels is strikingly evident, especially when they are grown continuously on the same land.

In favourable seasons it is possible to obtain good crops by the aid of artificial manures alone, as seen in 1905, when 31½ tons per acre were obtained, but in ordinary years the bad texture of the soil which results, and its tendency to lose water on account of the lack of humus, affect both the germination of the seed and the growth of the plant in its early stages.

THE PARK. GRASS-LAND GROWN FOR HAY EVERY YEAR.

The experiments upon the mixed herbage of grass-land began in 1856. The land has been in grass as long as any recorded history of it exists, for some centuries at least. The plots, of which there are 20 in all, are variously manured, two of them remaining without manure during the whole of the 50 years. Taking the average of this long period, the unmanured plots have produced rather more than a ton of hay per acre per annum, and there is no sign of approaching exhaustion or great falling off in crop from year to year. The impoverishment of these unmanured plots is more to be seen in the character of the herbage than in the gross weight of produce. Weeds of all descriptions occupy the land, and the relative proportion they bear to the grasses and Clovers has increased from year to year, until they now constitute nearly one-half of the herbage.

BROADBALK FIELD. WHEAT.

The experiments on the continuous growth of Wheat were begun in 1843, but for the first eight years the manuring was of a varied description, so that only three of the plots have received the same treatment during the whole of the sixty years. The plots as seen to-day began in 1852. On plot 3 Wheat has been grown without manure every year since 1843; for four years previously no manure had been applied, so that the present crop (1906) is the

FIG. 35.—GRAMMATOPHYLLUM SPECIOSUM AS IT FLOWERED IN SIR TREVOR LAWRENCE'S COLLECTION. (From a photograph obligingly supplied by Sir Trevor.)

sixty-seventh without manure. After a drop in production during the first few years the yield has been practically constant for the last forty years, fluctuating only with the seasons, and showing no immediate prospect of declining. The average crop has amounted to about 12½ bushels per acre, approximately equal to the average Wheat yield, taking the whole world over. With potash and phosphates alone, very little more Wheat is produced than without manure, but the crop is found to increase with each addition of nitrogen, rising from 24 bushels to 37 bushels of grain; but the straw is even more affected by the free supply of nitrogen, increasing from 21½ cwts. to 41 cwts. per acre as the nitrogen is doubled or trebled.

HOOSFIELD. BARLEY.

Experiments on the continuous growth of Barley were begun in 1852. The manures applied to each plot have practically been unchanged since, so that the plots to-day show the effect of more than fifty years' continuous cropping of Barley under the same treatment. The great importance of phospheric acid to the Barley crop is most strikingly manifest both in the general appearance of the plant and in the total produce. Where nitrate of soda is used as the source of nitrogen, the soda liberates sufficient potash from the soil to supply the needs of the Barley, but with ammonium salts the omission of potash tells upon the yield.

Particulars of experiments with Wheat alternated with bare fallow are also given, and in another field investigations on the residual value of manures is being carried out. Experiments on Potatos and various leguminous crops are conducted, and meteorological observations, including the measuring of the rainfall in a gauge which is one-thousandth of an acre in area, have been taken since February, 1853. *J. J. Willis, Harpenden.*

BURFORD, DORKING.

(See Supplementary Illustration and fig. 35.)

THE cool, shady entrance to the charming estate of Sir Trevor Lawrence, Bart., between tall trees, with their trunks clad with Ivy and the ground beneath carpeted with Ivy and Ferns, the carriage drive between rows of pyramidal Cypres, across the smooth lawn, bordered by shrubberies and bounded by the steep, crescent-shaped slope of Box Hill, the chalky soil of which shows white between the thick growth of Yew, Box, Viburnum, and other bushes which clothe its surface are well adapted to the pleasant homestead and pretty gardens surrounding it.

Sir Trevor and Lady Lawrence, who are among the most liberal supporters of horticulture, have always taken the greatest interest in gardening matters, and the Burford Gardens have world-wide fame, especially for their magnificent collection of Orchids.

But to many visitors the out-door gardens are the most interesting, as in them are always found a number of new or rare novelties, flowering for the first time, and an equally interesting lot of fine old plants displaying themselves in great beauty.

In the enclosure between the plant houses delicate plants are tried, and many are rendered quite hardy. Here the scores of fine white and rose coloured heads of bloom on the many specimens of Crinum Moorei, C. Powelli, and its pure white variety, all of which have been grown without protection for many years, are in great beauty. Other species are being tried in the same way. Near by Gerbera Jamesoni is also acclimatised, and freely sending up its vermilion-coloured flowers. Eucomis punctata and some other Cape bulbs are also now in flower; a pyramidal bush of Asparagus acutifolius is a large specimen, and other species are being tried out-doors. In the centre the Burford plan of growing the showy rose and yellow-coloured Water Lilies in compartively small tubs sunk in the ground is well exemplified, the plants being now in bloom, and arranged beside the tubs are many-flowered specimens of the white Lilium longiflorum and the yellow Cassia corymbosa, which, like the tall blue Solanum Wendlandi and a few other plants, proved to be not quite hardy in this locality, are sheltered in the winter. Lathyrus pubescens, a pretty, light blue

MR. W. BAIN, HEAD GARDENER AT BURFORD.

variety, is in bloom, and in the beds beyond, bounded by Sweet Peas, Sweet Briar, and Penzance Briars, and set out with pillars and arches of Roses, are many beds of uncommon plants in flower. Of the Roses an arch and pillars of Dorothy Perkins display it excellently, and Lady Gay and others are very effective.

Members of the Poppy family and of the Campanulas thrive well at Burford, and the handsome white Romneya Coulteri has many of its satin-like blooms. A bed of the double Welsh

MR. W. H. WHITE, ORCHID GROWER AT BURFORD.

Poppy Meconopsis cambrica flore pleno is a mass of flower; so also is the bright yellow Hunnemannia fumariæfolia and the copper-orange coloured Eschscholtzia crocea Mandarin. Shirley Poppies are always beautiful, and the beds at Burford show them at their best. Among the Campanulas a bed of C. macrostyla is a mass of lilac and purple flowers; a Burford novelty, for which a First-Class Certificate was obtained, Platycodon grandiflorum flore pleno, is of a fine purplish blue. To find the best varieties and to plant them in sufficient quantities to show them at their best is one of the methods tending to the success obtained at Burford, and hence the beds of Pentstemons, Phloxes, Violas, Delphiniums, and other hardy perennials are very effective.

Nor are the lesser Alpines neglected. A bed of various species of Gentian contains an interesting set, including the new Gentiana Lawrencei, which, it is hoped, will flower soon.

Passing through the winding walks we note beds of Richardia hastata and another Richardia fully in bloom, and which have been acclimatised out-doors; a fine and fragrant bush of Sambucus canadensis, pretty in leaf and flower, and which ought to be more frequently planted; the Flame Nasturtium (Tropæolum speciosum) trailing over some of the shrubs; some pretty arches of Clematis, of which C. Etoile Rose is the best, both for freeness of flower and growth; a plume-bearing mass of Apera arundinacea; a patch of Calochortus clavatus, which is one of the showiest; another of the bright blue Dropmore variety of Anchusa italica, one of the best of hardy blue flowers; Verbena "King of Scarlets," large in truss and bloom, and of brilliant colour; Tamarix hispida, flowering Heath-like, in small plants; and a large number of other pretty and rare flowers.

In the deep, shady dells, with tall, slender trees, and an undergrowth of interesting plants and shrubs, are a number of very strong Eremurus, which have just passed out of flower; some good specimens of Bamboos, Ferns, Azaleas, Rhododendrons, &c.

From the house there is a fine view across the smooth lawn, with its ornamental fountain and basin of coloured Water Lilies, the lobe-shaped beds around which are planted with dwarf scarlet bedding Begonias and blue Lobelias. To the right the scene expands over the meadows, and in front rises the steep face of Box Hill. Pretty and fragrant plants are arranged in the beds, some of which are of Heliotropes, others of Cannas, Nicotiana Sanderæ, Rehmannia angulata, Bamboo-like Eulalia japonica variegata, and Zebrina (quite hardy here), and a number of the newer decorative plants. The soil and situation of Burford present peculiarities which it is requisite to understand before such success can be had; but Mr. William Bain, for so many years head gardener there, and whose photograph we present to our readers, has long ago learned how to turn even the seeming difficulties to some advantage.

THE PLANT HOUSES.

In the cool houses is a fine batch of the blue Lobelia tenuior; also one of the Burford strain of Streptocarpus, celebrated for its large flowers and for the prettily-marked rose-coloured forms. The warm houses contain a very fine lot of scarlet and white spotted, and scarlet Anthuriums; some grand red-scarlet heads of bloom on Ixora macrothyrsa; the large blue Nymphæa gigantea; a case containing the Jewel-plants (varieties of Bertolonia, Sonerila, &c.; the reddish-salmon Crossandra undulæfolia—a very pretty decorative plant; a collection of Eucharis, some in flower; Strelitzia juncifolia, sending up bloom, etc.

THE ORCHIDS

have been frequently noted in these columns. Too much cannot be said of the richness of the collection, or the vigour of the plants under the care of Mr. W. H. White, the writer of our weekly calendar on "The Orchid Houses." In the cool Masdevallia house are some brilliantly-coloured Masdevallias and some pretty small species; the Epidendrums and Sobralias now, as always, have some in bloom; Platyclinis filiformis has over 100 spikes showing; Vanda "Agnes Joaquim" and the remarkable hybrid V. "Marguerite Maron," are finely in bloom, as are also some show Cattleyas; Lælio-Cattleyas and a few of the splendid collection of Phalænopsis; an interesting lot of Bulbophyllums, including

a large mass of the fine B. longisepalum; Barkeria spectabilis, and a host of other pretty things.

But the most remarkable sight at Burford, perhaps, is the long stage of hybrid seedling Orchids, which closely cover the surface of the pots in which they are pricked off, and at a distance resemble a batch of mosses as grown by market gardeners for decorative purpose. At fig. 35 we reproduce a photograph of the giant Orchid Grammatophyllum speciosum as it flowered at Burford, the only place at which it has flowered in this country. A fine portrait of Sir Trevor Lawrence was given as a supplement to our issue for July 30, 1904.

THE ROSARY.

THREE GOOD ROSES.

Two Roses that have done exceptionally well this rather dry summer are the beautiful pink Baroness Rothschild and the bright red Cheshunt Hybrid. In a Hampshire garden they have been in full bloom since quite early in the summer, and the constant succession of blossoms, particularly in the case of the Cheshunt Hybrid, makes them very valuable varieties to any amateur. Both kinds do well even in a rather dry sandy soil of shallow depth, and in the garden referred to they thrive in the midst of a far too luxuriant growth of Evergreen shrubs, with several Lime, Beech, and Fir trees in close proximity. The only fault to be found with Baroness Rothschild is that it has no scent, but after all, even if wanted for cutting, this is not a very great drawback, and you may grow plenty of varieties which have exquisite perfume but not half the beauty of this fine sort. Madame Carrière, the free-blooming climber, has done wonderfully well also this year on a pergola in this same Hampshire garden. *East Sussex.*

CULTURAL HINTS FOR AUGUST.

The budding of the Manetti and Multiflora stocks can be proceeded with, and where there have been abundant rains the stocks will now run freely. The earliest budded plants which have "taken" should have the ties loosened at the first opportunity to prevent them cutting into the bark. If the first buds have failed on the Standard Briars, there is yet time to insert others, which should be put as near the first as possible. The shoots on the early budded Briars may be shortened back to within 8 inches of the bud towards the end of this month. All the Hybrid Perpetuals, Teas and Hybrid Teas, that have flowered during July, can be pruned back a little to induce fresh growth and a later display of bloom. With regard to the climbing varieties, when the flowering wood is cut away it is a good plan to lay in the best ripened shoots of the current year's growth for next year's flowering and then apply a good surface mulch of manure to the roots, following this with a good watering. The following varieties will respond admirably to this treatment: Année Vibert, Climbing Perle des jardins, Madame Bernard, Belle Lyonnaise, and W. A. Richardson. All the above are useful alike for growing upon pillars, arches, pergolas, &c. Bush Roses that have grown too large or have lost their shape, but are of a good variety and desirable to keep, can be layered, the wood being now sufficiently firm for the purpose. Take out a trench some distance from the stem, and according to the length of the shoots, then bend them down against the back of the trench which will support them nearly upright. After making an incision halfway through the wood about 1 inch long, and before filling in the trench, work in some leaf-mould, sandy grit, and burnt earth. Now fill in the trench and secure each shoot with a thin stick, making all firm. Short-jointed cuttings obtained from side shoots taken off with a heel of the Hybrid Tea and Tea-scented varieties will root freely if inserted at the present time. Remove the lower leaves and insert the cuttings in well-drained sandy loam in a cold frame in a shady position; afford a good watering, and provide shade as required. The earliest forced Pot Roses that have been standing out in the open air can now be repotted or top-dressed. If the plants were freshly potted last season a good top-dressing will suffice now. This can be done by taking off a few inches of the surface soil and replacing it with good turfy loam and a liberal proportion of bone-dust, soot, and burnt earth. Examine the drainage and make it perfect. For the Tea and Noisette section add a little sand and leaf-mould. In repotting, shake out most of the old soil and, according to the condition of the roots, use the same sized pot, or pots 1 inch larger in diameter, which should be quite clean. For drainage use one large crock placed hollow-side downwards, and then make up to about an inch in depth with a few knobs of charcoal and bones. The same compost used for top dressing can be employed for repotting. If the loam had been stacked with a little manure some months in advance of being used so much the better. Pot firmly with a potting-stick, and when finishing leave a clear inch below the rim of the pot for watering; thoroughly soak the soil through, but afterwards water rather sparingly during the autumn. Place the plants outside on a base of ashes in a shady position. *J. D. G.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence Bart., Burford, Surrey.

Orchids, and especially the warmer-growing kinds, appear to thoroughly appreciate the extra sun heat we are now having. The Dendrobiums are growing fast, and roots have become plentiful. These plants now require plenty of root moisture until growth is fully completed, and if the foliage is well syringed underneath several times during the hottest part of the day, insect pests will be kept in check, and growth greatly assisted. Such plants as Catasetum, Cycnoches, and Mormodes, that are suspended close up to the roof glass, dry very quickly at the root, and therefore, as many of them are producing flower spikes in conjunction with the young growths, the plants should be carefully examined every morning. It is not advisable to spray this section of Orchids overhead, the growths being very tender. The deciduous Calanthes should by this time have filled their pots with new roots, and copious waterings must be applied each time a plant becomes dry. Such plants as Aerides, Vandas, Saccolabiums, Renantheras, Sarcanthus, &c., which do not possess pseudo-bulbs, and are potted only in crocks and sphagnum-moss, should be watered often enough to keep the moss on the surface in a growing condition. The Phalænopsis must be very carefully watered at all times, as their leaves are apt to become spotted and diseased if saturation of the rooting material is maintained for any length of time. Their top-dressing of growing sphagnum-moss should be allowed to dry till it becomes of a whitish-green colour before water is given, and then it should be very lightly sprinkled with a fine-rose watering-can, or the syringe which is generally advocated for spraying purposes. When affording water to Phalænopsis, it is better practice to sprinkle the roots around the sides of the basket or pan than to pour water in close proximity to the collar of the plant. Well-rooted plants of the various Cypripediums may be given almost any amount of water whenever they appear to be dry, and they delight in a gentle spraying overhead, both in the morning and at closing time in the afternoon. Habenaria pusila (militaris), H. carnea, H. Susannæ, &c., that have their growths now well advanced should be raised well up to the roof of glass, and the plants must be copiously supplied with moisture until the flowers open. H. rhodocheila just starting into growth should be repotted at once, and be treated as advised for its congeners in a former Calendar. In fine weather, when the nights are warm, there is no need to use much fire heat in either division. Even in the East Indian house the pipes should feel only moderately warm at night. Admit air freely through the top ventilators during the day, but close them early enough in the afternoon to allow the sun to raise the atmospheric temperature to between 80° and 90°. Damp well between the pots, under the stages, &c., so as to get the house thoroughly charged with moisture. During the evening the top ventilators may be slightly opened again, leaving a "chink" of air on through the night.

In the cool house such plants as Odontoglossum Rossii, O. Cervantesi, O. Madrense, O. Duvivierianum, O. Oerstedii, O. Humeanum, O. aspersum, O. nebulosum, O. uro. Skinneri, O. Bictonense, and O. cordatum are starting to grow, and as the young growths will soon produce new roots they may be re-potted at once. The same remarks are applicable to Cochlioda Noetzliana, C. vulcanica, and C. sanguinea. The stronger growing varieties as O. nebulosum should be grown in pots, but the dwarf kinds are best suspended well up to the roof glass in the ordinary flower pot or shallow Orchid pans. Good drainage is essential, and the potting mixture should be of peat and sphagnum-moss in equal ratios, pressing this moderately firm about the plants. Keep the surface of the compost well supplied with water until growth is completed, when moisture should be slightly diminished, but immediately the flower spikes appear increase the quantity. This house should be freely ventilated at all hours. Keep the paths, stages, &c., damp, and see that the plants are thoroughly shaded from sunshine.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Nepenthes.—Any plants that have been allowed to grow up on a single stem should be cut down to within 2 or 3 inches of the base, for they will not pitcher freely in this condition. If the tops of the shoots are pinched out every time three or four leaves are made, pitchers will form freely on the young growths. A little fresh sphagnum-moss, with some fibrous peat mixed with it, will form a good compost for top-dressing the baskets. Keep a sharp look-out for thrips and scale, for these are capable of quickly destroying the foliage.

Marguerites.—Plants which have been cut back and are intended to produce cuttings should be closely watched for the leaf-mining grub. Frequent spraying with the XL-All insecticide will act as a deterrent to the fly (which is now on the wing) laying its eggs on the young leaves, and by such timely attention much anxiety in growing these plants may be averted. When once the maggot is in the leaf it is most difficult to destroy without injury to the plants. Fumigation with the XL-All vaporiser has a wonderful effect in checking the progress of this pest.

The Stove.—Specimen plants in flower of Clerodendron, Ixora, Bougainvillea, Stephanotis, Allamandas, and Anthuriums may now with safety be transferred to the corridor or conservatory and allowed more sunshine and ventilation, which will the better help to ripen their growths. Care in the application of water, both in regard to quantity supplied and to its temperature, will be necessary while the plants are retained in the cooler and more ventilated structure. Increase the ventilation in the stove and extend the time of closing to 4 p.m. on fine days; at the same time gradually reduce the shading from the present time onward, as the thorough ripening of the wood is essential if free flowering specimens are desired. This applies especially to specimens that are planted out in the borders and trained over the roof.

Chrysanthemums in pots will soon be showing their flower buds, and in this district growers will be on the alert to secure the buds shown from the present time until the first week in September. The plants, having filled their pots with roots, would derive much benefit from light applications of a fertiliser, as these would induce increased root action just at the time when the buds are forming. It is advisable to take notes of the dates on which buds are "taken" (selected) of the newer varieties for future guidance. Keep the plants perfectly free from insects, otherwise many of the buds will be deformed. A light spraying with an insecticide

once a week will ensure cleanliness, and earwigs, which are usually so troublesome, will not so readily take up their quarters on the plants.

Bouvardias which have been planted out in frames will require a few small stakes and ties to keep them in their places. A little weak liquid manure may be afforded the plants about twice a week if they are not making gross wood, which is sometimes the case with old plants when planted out.

Richardias (*Callas*) *in pots.*—These will again be growing freely, and any that require repotting should have immediate attention, so that the young roots may have the benefit of the new compost, and the vigour of the plants be maintained. The early flowering of Richardias will much depend on the liberal treatment the plants have received in the early stages of growth. Good turfy loam, used in a rough state, with dried cow manure and coarse sand, is the best compost for these useful plants. Afford an abundant supply of water to the roots of plants growing in trenches.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Peaches and Nectarines.—Now that the fruit is all gathered from the early house, and this season's bearing wood has been cut out from the trees, abundance of air should be admitted during night and day. Continue to use the syringe as a prevention against insects, and keep the borders well supplied with water, alternating this with an occasional dose of weak liquid manure. It may be necessary in some cases to bring trees that are growing on the walls outside into the forcing houses. If such trees are planted in the borders, make an incision in the ground with a spade, commencing about 2 feet from the stem of the trees. This operation will cause the trees to make more fibrous roots, and thus be in a better condition for removing later on.

Late Houses.—Where fruit is required as late as possible, the houses should be liberally ventilated so that the atmospheric temperature will be kept comparatively low both day and night, but without causing cold draughts. Afford abundance of water and liquid manure to the roots during the second swelling of the fruit, and syringe the trees early in the morning before the sun shines fully on the foliage, and again soon enough in the afternoon, for the leaves to become dry again before night. Cut out to one leaf all sub-laterals as they appear, and expose the fruits well above the foliage, so that they may receive the benefit of the sun. If the last thinning of the fruit has not been completed, it should have immediate attention. Young trees planted in new borders usually make very strong and vigorous growths, therefore the strongest shoots should be stopped in order to obtain a balance over the whole tree.

Houses affording Ripe Fruit will require to have a little air left on at night. Gather the fruits very carefully as they approach ripeness and place them in boxes lined with cotton wadding, putting them in the fruit room. By adopting this method they may be kept fresh for several days. All bruised or undersized fruits can be used up in the kitchen. The trees should be carefully examined occasionally to see that the ties are not cutting into the bark; this would cause "gumming."

Peach Crimson Galande.—This is a splendid variety for growing in the second early house. The fruits are of a good size, finely formed, and beautiful in colour. In order to send it to the table in perfect condition, it should be gathered a little before it is ripe and kept for a few days, which will improve its flavour.

Late Melons.—Where these delicious fruits are required late in the season, the plants should be put into their fruiting quarters at once. A small house should be set apart for them where a night temperature of not less than 65° can be maintained when the days become shorter and colder. It is necessary at this date to have strong, sturdy plants to put out, so that they may make an uninterrupted growth from the start to finish. The plants may in some localities require a thin shade until they get established. Two or three fruits to each plant will be ample for this late batch. Cut out any side laterals that are not required for fruiting.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Time for Note-taking.—The present is an appropriate time, when the flower garden is resplendent with a blaze of colour, and the majority of plants in borders and beds are appearing to their best advantage, to make observations on the attractiveness or defects in the different subjects; to record opinions on novelties; to assign positions for special plants, and at the same time to note the harmony of colours of particular flowers when in proximity to one another. If a re-arrangement of herbaceous plants in the autumn is contemplated, or an improvement in the annual flower border next spring, notes taken now, with the plants and colours of flowers in front of one, will greatly facilitate the work when actually taken in hand. There are plants in the borders which, because of the brevity of their flowering period, or because of their blooming later or earlier than their companions, or their habit of growth is disappointing, must needs be eliminated to enhance the attractiveness of the border. Now is the time to make note of these, and decide on their substitution. The same is applicable to the formation of new ideas and work, insofar as it refers to flowers and colour, as obviously in planning new features in the garden it is so much easier to design and picture the effect and judge of its success, when the actual colours of materials are in evidence before one for reference and comparison, than if left until necessary to depend entirely to the retentiveness of the memory.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Winter Onions.—The end of the first week in August is a very good time to sow for this crop. At any earlier date there is always the chance of a large proportion running to seed, and, if sown much later, the plants do not become sufficiently large to be able to survive severe weather in winter. Sow the seeds on soil that has been trenched and liberally manured. Make the surface moderately firm when sowing the seeds, so that the roots will not ramble quickly and cause growth of a too robust and soft nature. Some of the varieties usually sown in the spring are very suitable to sow at this date, especially Sutton's Al and Perfection. Ailsa Craig, however, is not so reliable, owing to its extreme liability to run to seed. Of the well-known varieties, Giant Lemon Rocca is one of the best, and for a variety to mature quickly Sutton's White Leviathan is the best I have tried.

Cauliflowers.—At this season there is much trouble to get the early autumn varieties to "turn in" with that purity of curd that is so essential in a good "head." The lack of moisture in the soil and air, and the presence of much sunshine seem to be the causes. The plants should therefore be afforded copious supplies of water, both overhead and at the roots, tying also the leaves over the curds as soon as the latter begin to form. When they are large enough for use in the kitchen pull them up and store them in a cool, moist place, and if they are not required immediately they will keep good for a week or ten days, if the decaying leafage is taken off before it damages the curd. Loosen the surface soil between young plants, and if they are growing in a windswept position earth up the stems to prevent the plants suffering damage through "rocking" by the wind. Plant out any seedlings of early varieties that may be at hand; they will furnish useful "heads" before winter sets in.

Mushrooms.—The collecting of material for the making of beds to yield an early autumn supply indoors should not be further delayed. Daily gathering from the stables is much better than having it in quantity when it has had all its good properties spoiled by exposure to the weather. Add to the droppings as they become dry some good soil, from an old pasture land for preference. In the meantime the Mushroom house should be put in order, and any necessary repairs made to the beds or stages. Let the walls be limewashed. Early beds should be made on the ground level when possible, as this is cooler than the stages.

Tomatos.—Plants growing out of doors should have the tips taken out of the leaders just above a truss of blossom. There is no gain in letting the growth at the tip proceed further, as the fruits which set late in the autumn would not ripen. Keep all side growths rigidly pinched off, and if the plants are well set with fruits, liquid manure would help them materially. Sow seeds for raising plants to fruit in winter if this has not been already done.

Herbs.—Many herbs will require to be cut and stored from week to week. Select a dry day for doing this. Gradually harden the herbs before hanging them up in a freely ventilated store-room. Label all the bunches correctly, so that anyone may collect herbs without making mistakes. Encourage young plants to make growth by affording them water in dry weather.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Raspberries.—Lose no time in cutting down the old canes to the ground level, so that the energy of the plants may be solely devoted to the young growths that will furnish the crop next season. If it is the practice to train the young canes to strained wires or a trellis, let them be tied up, cutting away any weak shoots. If stakes are used, leave about four to six canes to each stake, and tie them up loosely, so that the air may easily circulate amongst the leaves. Clear the ground of any weeds, and hoe the surface lightly. The roots will require to be kept as moist as possible.

Vines on Buildings, Walls, etc., should have the leaders nailed in shapely, and the laterals cut back with a sharp knife to three or four leaves; allow room for each leaf to develop, and expose the fruit to the light. Syringe the plants with sulphide of potassium [½ oz. to the gallon of water, avoiding the paint which would be discoloured] to prevent mildew, and where it is necessary to afford the roots liquid manure.

Strawberry Beds.—Old plants may now be destroyed if not required to supply further runners. The supply of runners should have been obtained by this time, except perhaps in the most northern counties. Old plants should be raised with a digging fork (not cut off), and taken to the fire heap. The ground will be serviceable for a crop of Broccoli after it has been hoed and cleansed. Clean other Strawberry plantations and remove runners from the plants. Forced Strawberry plants put out early in the season should be kept clean and free from runners, and any flower-spikes showing should have the flowers thinned out, leaving only a few of the strongest, which will then produce serviceable fruits later on. Perpetual fruiting varieties of the St. Joseph and Alpine class should be freely supplied with liquid nourishment. They will presently provide an agreeable addition to the dessert.

Loganberry and Varieties of Rubus.—These are now bearing profusely, and should be supplied with water should the weather be dry. Thin out the shoots similar to Raspberries, and lightly secure those remaining to the columns by tarred string.

Wasps.—Keep a sharp look-out for these, and trap any that can be caught. Hunt for nests, and destroy them without delay.

Watering.—Keep all fruit trees supplied with moisture, especially those that are bearing heavy crops. Peach trees that have ripened a crop should be syringed daily, using occasionally some insecticide.

Espalier-trained Apples.—This method of growing Apples is capable of producing good fruits, and an abundance of them. These should now be finally "summer pruned," if it is not already done. Tie the leading shoots in to the wire or other supports, and if the trees are growing on the edge of vegetable quarters they may need extra nourishment. The fruits on the upper side of the branches of espalier trees usually gain a very high colour, and are easily protected from the birds in dry weather. Early varieties succeed well grown in this particular style.

General work.—This will include the watering and syringing of trees during hot weather. Spray under the foliage as a good preventive of red spider; tie and nail growths to the wall or fence. Protect fruit by netting it if birds are numerous. Prepare nets that have been used upon Strawberry and Raspberry plantations to be stored away dry, labelling each one with its size, &c. Keep the fruit room cool, dry, and well ventilated.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR AUGUST.

TUESDAY,	Aug. 7	Leicester Hort. Sh. in Abbey Park (2 days).
WEDNESDAY,	Aug. 8	Roy. Hort. Soc. of Ireland's Autumn Sh.
FRIDAY,	Aug. 10	Roy. Bot. Soc. (anniversary meeting). Huddersfield Hort. Sh. (2 days).
SATURDAY,	Aug. 11	Dutch Gard. Soc. meets.
TUESDAY,	Aug. 14	Roy. Hort. Soc. Comm. meet. Exmouth Hort. Sh. (2 days).
WEDNESDAY,	Aug. 15	Taunton Deane Hort. Sh. (2 days) Wilts Hort. Sh. at Salisbury.
THURSDAY,	Aug. 16	Manchester & North of England Orchid Soc. meet.
SATURDAY,	Aug. 18	Sheffield Hort. Sh. German Gardeners' Soc. meet.
TUESDAY,	Aug. 21	Brighton Hort. Sh. (2 days).
WEDNESDAY,	Aug. 22	Shropshire Hort. Soc. Sh. at Shrewsbury (2 days). Harpenden Hort. Sh.
THURSDAY,	Aug. 23	Roy. Hort. Soc. of Aberdeen Exh. (3 days).
FRIDAY,	Aug. 24	Devon & Exeter Hort. Soc. Sh.
SATURDAY,	Aug. 25	Dutch Gardeners' Soc. meet.
TUESDAY,	Aug. 28	Roy. Hort. Soc. Comm. meet.
WEDNESDAY,	Aug. 29	Bath Floral Fete (2 days).

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63·2°

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, August* 1 (6 P.M.): Max. 78 ; Min. 59

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, August* 2 (10 A.M.): Bar., 30·1; Temp., 77 . *Weather*—Fine.

PROVINCES.—*Wednesday, August* 1 (6 P.M.): Max. 71° Guildford; Min. 62° Land's End.

The Hybridisation Conference. The Conference which the R.H.S. has this week instituted, and which is in progress as these pages are passing through the press, may be looked on as a "sign of the times." It is one which reflects credit on the old Society and shows that its directors are conscious of the responsibilities that rest upon them, and are desirous not to limit their energies to the holding of exhibitions and the distribution of medals. Darwin's "Origin of Species," and more particularly his "Animals and Plants under Domestication," in the preparation of which he availed himself so largely of the observations of cultivators, drew special attention to the subject of heredity. For a time it seemed as it this were a subject that could not be studied with much chance of success. The explanation of the various phenomena seemed to be beyond our grasp. There was, as Mr. Bateson said, more of mystery than of order. But conditions have changed. Mr. Bateson, the President of the Conference sitting this week, rescued Mendel's observations from oblivion; De Vries worked in the same direction; Correns and Tschermak have repeated Mendel's experiments. In our own country, besides Bateson, Hurst and Biffen, Miss Sanders and many others are now engaged in reducing to order and symmetry facts and observations which were previously in a more or less chaotic condition. Vagueness and conjecture are giving place to exact numerical proportion, according to the "law" of segregation, to the great advantage of physiological science, and ultimately assuredly to the great benefit of the practitioner. This great change has been brought about, not merely by careful observation and comparison, but by actual experiment. The student of what it is proposed to call "genetics," if he is to make progress, must not rely on text-books or the teachings of a master; he must not be content with the laborious comparison of dried specimens in the herbarium, or the more or less casual inspection of plants in the trial-grounds, he must conduct carefully-planned experiments, and, by their aid, he will obtain answers to his questions which can be supplied by no other means.

This is the work for the coming generation in particular. Observers of a former generation will have much to unlearn, they will find it difficult to shake off old routine and divest themselves of old prejudices. A battle like that between the "artificial and the natural system" will have to be fought under new circumstances, and, judging from the past, there can be no doubt as to the result. The natural system is ideally perfect, but, in practice, an artificial system is still, and must always be, a necessity. Whatever advance may be made by the Mendelians, and the students of cytology, however widened may be our conception of "species" and "varieties," in practice we shall still have to trust in the judgment and discrimination of the systematic botanist. There will be room for both classes of observers and workers, and each will derive assistance from the other. Push analysis as far as we may, synthesis will still be needed to co-ordinate results and make them intelligible to students in general. The old Linnean "species" are now recognised as too comprehensive to be taken as units (unless purely for convenience sake). How, then, are we to get at the real units, if such there be? The answer is, by microscopical analysis of the nucleus of the cell and its "chromosomes," but especially by experimental cultivation and rigorous determination of genealogical position. Take a seed from a self-fertilised plant and isolate the seedling. When in time it produces flowers, screen them from all possible advent of pollen from other sources. By a continuance of this practice of self-fertilisation for several generations under like conditions and by eliminating all "rogues," we may hope to obtain a "specific" form which will perpetuate, without change, its characters we shall then arrive at the elementary species. In this way, M. L. Blaringhem, who has a most valuable paper in the April number of the "Journal de la Société Nationale d'Horticulture," has obtained at least eight perfectly distinct forms from the barley, Hordeum distichum of Linnæus. Hugo de Vries, in demonstrating by experiment the origin of what are called "elementary species," has supplied the method of discovering new types from which improved and stable forms may be procured. M. de Vries has also shown the strong tendency there is for certain abnormal forms to become hereditary. Amongst other cases he cites the case of the twisted teasel. In ninety-five per cent. of his seedlings he has observed the twisted conditions to be reproduced. Here we may remark that these results do not always occur. Several years since Professor de Vries kindly supplied us with seeds of his twisted variety. These seeds were sown, but no twist was observed in the offspring. Seeds come up year by year in our garden, the descendants from those originally sent by M. de Vries, but in no single instance has a twist of any kind been observed, except in one case, last year, where, after repeated pinchings and other mal-treatment, we induced a slight twist in one of the side branches of one of the specimens operated on. In a similar manner M. de Vries has observed the splitting-up of the "species" Œnothera Lamarckiana into nine distinct "mutations," or sports, these sports having all the attributes of species as regards constancy and hereditary transmission. Of course, there is no doubt whatever as to the correctness of M. de Vries' observations which have been confirmed by other observers, but he has been fortunate; such mutations are not always to be found in Œnothera. No such change has been witnessed by others, and we have had opportunities of seeing them, and have watched for them for several years. In like manner we observed, some years in succession, a very large patch of Impatiens Roylei in a deserted garden. The plant had, in fact, usurped the whole space, but no "mutations" were visible. Negative evidence of this kind is, of course, unimportant, save as showing that "mutations" of this kind only occur under certain circumstances, which are at present mysterious.

As to Mendel's experiments, they are, of course, the subject of remark in Mr. Bateson's address and in other papers. We would only remark that one very important point brought out is that in hybridisation there is juxtaposition but no actual blending or fusion of parental characters; the male cells remain unaffected, the female cells are unchanged, though some "characters" may become "dominant," others latent or "recessive," till, by a so-called process of reversion, the latent character may reappear.

The subject is too extensive and complicated for us to deal with in the course of an article. The papers read at the Conference were so numerous, and in many cases so highly technical, that we can do little more than enumerate them. The reader has before him in the present issue the text of Mr. Bateson's lucid summary, and we look forward with great interest to the volume in which the R.H.S. will no doubt enshrine the full proceedings of this Conference. That these somewhat recondite researches will lead to important practical results is certain. M. Blaringhem, in support of his view, concludes his paper with a reference to the "marvellous" progress in the improvement of agricultural plants effected in the experimental grounds at Svalöj, in Sweden, by Dr. N. Hj. Nilsson. In this matter, as in most others, it is researches, made originally for purely scientific purposes, that turn out in the end to be far

the most fruitful in practical results, and hence, whilst technical schools are necessary, indeed, indispensable establishments for original research are of even greater importance, albeit their value to the practical man may not be immediately apparent.

Next week we shall give a report of the proceedings after these pages had gone to press. In the meantime we may congratulate the Society on the large number of distinguished scientists that have responded to their invitation, and we hope that they will be pleased with their reception.

National Amateur Gardeners' Association.—A lecture on "Violas," by Mr. D. B. Crane, and exhibition of flowers, &c., will take place at Winchester House, Old Broad Street, E.C., on August 7, at 7 p.m.

The Board of Agriculture.—Mr. Robert Henry Rew has been appointed to be an assistant secretary to the Board of Agriculture and Fisheries, in the place of Major P. G. Craigie, C.B., who retires from the public service as from August 1.

The late William Farrer.—Mr. William Farrer, whose death occurred last April, was best known to the agricultural world for his experiments with Wheat. According to the *Agricultural Gazette of New South Wales*: "For the past twenty years Farrer had been engaged on the self-imposed task of the improvement of Wheats, and though his aims were more immediately directed towards the satisfaction of local requirements, the thoroughness of his methods and the broad scope of his investigations have been productive of results of value to every Wheat-producing country in the world. The problem which he set himself was the systematic improvement of Wheat by cross-breeding and selection, particularly in the direction of producing types which should resist our two principal scourges—rust and drought, and in the maintenance of a high milling standard, more especially in the production of strong flour Wheats." The result of his endeavours was the production of cross-breds superior for the purposes required of them to any varieties formerly in use, not merely in his adopted country, but throughout the world.

M. Ed. Andre.—It is with great concern that we hear of the very serious illness of our friend and colleague the Editor of the *Revue Horticole*.

Le Bambou.—The July number of this periodical published by M. Jean Houzeau de Lehaie, Ermitage, Mons, Belgique, contains among other matter of interest to Bamboo cultivators a complete list of all the species cultivated in Europe, together with their synonyms, and indications of their native country.

The Oldest Living Tree.—A correspondent of the *Times* writes:—"It is difficult to realise, in these days of scepticism and higher criticism, that it is possible to see and handle portions of the branches of a tree under the shade of which both St. Luke and St. Paul, according to Dean Farrar, probably rested. In the island of Cos, in the Ægean Sea, there stands, jealously guarded, a huge plane tree, measuring nearly 18 yards in circumference. It is surrounded by a podium, or raised platform, breast high, doubtless built to support the trunk of the tree after it had become hollow and weak from age. The lower branches are still well preserved, and have been shored up by pieces of antique columns, over the upper ends of which the branches have grown like caps in consequence of the pressure of their own weight. Close by the tree is a solid marble seat, which is said to be the chair of Hippocrates, the father of medicine, and it is supposed that he taught the art of healing from that seat. He was born at Cos 460 B.C. This gives a clue to the age of the celebrated plane tree, which must be considerably more than 2,000 years old. Dr. Edward Clapton, formerly physician at St. Thomas's Hospital, whose devotion to archæology is well known, sent an agent a year or two ago to procure some fragments of the tree. This was done, but at considerable risk, as the Sultan, who attaches great importance to its preservation, has given strict orders that no one is to touch the tree, which is therefore guarded day and night. The specimens which Dr. Clapton obtained have now been generously handed over to the Royal College of Surgeons, where they will be displayed in the museum. They consist of two pieces of branch, a bundle of twigs from the branches, and a small box of leaves and round button-like catkins of the plane tree." [There can be no doubt as to the antiquity of this tree, but we fail to recognise any direct evidence of the extreme age attributed to it.]

Country Life in France.—We note the publication, from 3, Rue de Navarin, Paris, of a paper somewhat on the lines of our contemporary, *Country Life*. *Villas et Maisons de Campagne* deals also with gardens pleasurable and profitable, with the farm and orchard, and with country industries, sports, and interests in general. The first number is interesting, and we wish success to the venture. There are plenty of illustrations from photographs, as well as some working plans in the new paper, the sub-title of which includes the word "home," for which, as is well known, neither "villa" nor "maison" is an exact translation.

Economic Meteorology and the Fruit Crops. Mr. A. O. Walker, F.L.S., of Ulcombe, Kent, writes us as follows:—"In your last issue (p. 70) you remark on the 'neglect of fruit cultivators in the matter of raising late-flowering varieties and the selection of sheltered localities.' As regards the first of these questions, I do not consider it of much importance, for frosts and cold winds have no fixed time, and the best crop of Cherries I had this year was on the earliest flowering variety, the amount of blossom on all the trees being about the same. But it is surprising that no organised effort has been made to ascertain and record the situations where the fruit crops suffer least from adverse weather influences. In August, 1905, I called attention to this question, and to the great difference between the climate of this place and Maidstone (*Nature*, vol. lxxii., p. 342). The question is a difficult one, and complicated by conditions of soil, exposure to winds, methods of cultivation, &c., but its great economical importance, where the fruit industry is as large and increasing as it is in Kent, surely warrants some expenditure on the part of the county authorities. The appointment of two or three county agricultural inspectors, who would report every year on the climatic conditions at the blossom time, and the state of the crop in the summer, the good and bad localities being indicated exactly on the 6-inch Ordnance map, with the co-operation of the fruit growers, should in time lead to a practical knowledge of the best sites for orchards. And the duties of the inspectors should include enquiry into all kinds of insect and fungus pests, for which they are sadly needed. They might be assisted by an association of economic meteorology for the county, who could supply the meteorological data. The South Eastern Counties' Agricultural College at Wye might be the scientific centre of the movement, in the same manner as Liverpool University has been for the Lancashire Sea Fisheries. I am quite aware of the danger of suggesting any addition to the rates, but I fancy the salary of two or three inspectors (who must, however, be thoroughly competent or they will be worse than useless) would only amount to a small fraction of 1d. in the £, while the saving in preventing the planting of orchards in such unsuitable positions as in the case of many in this neighbourhood would eventually be enormous."

FLORISTS' FLOWERS.

THE RUNNING OF THE COLOURS IN CARNATIONS.

There were not many examples of run flowers in the classes for Bizarres seen at the recent show of the National Carnation and Picotee Society. So far as my experiences go the reasons for the "running" of the colours in Carnations are not to be ascribed to anything connected with the cultivation of the plants, but to the natural sportive nature of the Carnation. A variety may run in one year, and the next year the flowers will be quite clear and finely marked, and the chances of clean blooms are equal whether layers are taken from plants that have produced run flowers or from clean ones. The chief points to be observed in cultivating these florists' varieties are: to avoid the use of crude or excessive quantities of manure in the compost; to make use of pasture loam that has been one year in stock; not deprived of its fibre, and where the loam form two-thirds of the whole. If the loam be of a heavy nature, it may be necessary to add some road grit or sharp sand, not otherwise, for the fibre of the grasses and other plants of which the sward consists will afford sufficient porosity.

Any substance added to the compost which would engender excessive vigour to the plants should be avoided. Seeing that moisture is more to be guarded against than frost, I would advise the raising of the beds above the general ground level. For the same reason the plants wintered in pots in cold frames should be plunged in coal ashes of sufficient depth to make sure of the rapid passage of water from the pots. *F. M.*

KEW NOTES.

THE GREENHOUSE.

Some of the species of Isoloma and Tydæa (the latter are now included under Isoloma by botanists) hybridise freely, and there are now a large number of interesting hybrids in this house (No. 4). A group of a dozen plants is to be seen here. The heavily spotted flowers are very freely produced, and grown several together in 6- or 7-inch pots the plants form nice specimens. The long, tubular, scarlet flowers of Gesnera cardinalis imantha are very effective, and the plants are used here as a groundwork for red and white Balsams. Baskets of Achimenes suspended from the roof appear more at home than when growing in pots. Especially good are A. coccinea and A. longiflora var. macrantha. The pure-white flowers of A. (Dolichodenia) tubiflora are sweetly perfumed. It is a distinct plant, 2 feet high, with four to ten flowers on a panicle. Saintpaulia ionantha, the African Violet, is now to be had in varying shades of colour, from white to deep purple. It is very easy to raise a stock of any particular colour desired, as pieces of the leaves make roots readily if laid on fibre, or other similar material, in a moist house. Streptocarpus and seedling Gloxinias are also flowering freely. The large and handsome flowers of Lilium sulphureum cannot fail to attract attention growing in the beds. A number of L. philippinense in 3½ and 5-inch pots look almost as if the white trumpet flower is too heavy for the slender stem and elegant foliage. L. tigrinum var. pseudotigrinum is also flowering in pots, and planted out in one of the beds. Mimosa pudica, the sensitive plant, is very popular with visitors. The small globose pink flowers and pinnate leaves are ornamental, dotted amongst plants with brilliant flowers. The varieties of Salvia splendens are now numerous, and can be had in flower almost the whole year round. The hybrid Statice profusa (S. puberula × S. Hol-

fordii) lasts a long time in flower. Francoas make useful subjects for greenhouse decoration. If the house is a small one, plants can be raised from seeds and obtained in flower in six to nine months. For larger greenhouses the plants may be grown on for several years. Those at present in flower vary from one and a half to three years old. The racemes of flowers are freely produced, and vary in colour from white to deep pink. They are hybrids of the three species—F. appendiculata, F. ramosa, and F. sonchifolia. The variegated Lily of the Valley tree, Clethra arborea variegata, is useful as a foliage and a flowering plant. The white flowers are abundant at the ends of the shoots. In the warmer parts of the country it succeeds in the open.

Standard plants of varying kinds are always useful for dotting amongst groups of low growing plants. By this method the flowers of some plants are seen to much greater advantage. This is especially so with Abutilons. The hanging, bell-shaped flowers can be seen much better than when grown as bush plants. Other plants grown in this way are Fuchsias, Acers, Zonal Pelargoniums, and Heliotropes.

The Glory Pea of Australia, Clianthus Dampieri, with its bright red and black flowers, is conspicuous both in baskets suspended from the roof and in pots. Little success is obtained by growing the plant on its own roots. All the plants flowering here were grafted on Colutea arborescens in the seedling stage. *D. D.*

SOCIETY FOR HORTICULTURAL SCIENCE.

SUMMARY OF PAPERS READ AT THE CORNELL MEETING, JUNE 27-28.

President L. H. BAILEY's address was on "The Field for Experiment in Horticulture." Prof. JOHN CRAIG presented a paper on "Plant Growing by Artificial Light." Prof. LAZENBY spoke on "Plant-Growing under Different Coloured Cloths." Unfortunately, these papers have not yet come into the reviewer's hands, and hence abstracts of them cannot be given at this time.

Mr. W. T. MACOUN spoke on "The Relation of Winter Apples to the Hardiness of the Tree." To withstand a test winter in Ottawa, a tree or shrub must ripen its wood early. Winter killing is liable to be more severe after a season when the growth has been strong than when it has been short. The more moderate the climate where a variety originates, the less resistant is it to the winter killing. The hardiest two varieties of Apples are those that have originated in Russia and are summer or autumn varieties. This is because these ripen their wood most thoroughly, whereas winter varieties continue growth later in the season. Unless the fruit of a variety reaches a certain, but, as yet, undetermined, stage of development every season a certain time before it has to be picked, owing to danger from frost, that variety is not a safe one to plant. The basis for the production of the desired winter Apple for the north should be a variety which has withstood test winters in a similar climate, and is also the latest keeper of such varieties.

Prof. WILLIAM STUART presented a general discussion of the use of anæsthetics in the forcing of plants, and summarised his own experiments with Rhubarb.

The experience of a number of investigators indicates that some classes of plants will stand larger doses of anæsthetics than others. As a rule, these doses vary from 7 to 15 c.c. per cubic foot of air space. The time of treatment varies with the season of the year, the class of plants and the temperature at time of treatment. As a rule this variation is from 24 to 72 hours. Etherisation of rhubarb plants for winter forcing results in an increased yield.

Freezing, at least early in the season, is a necessary process. Etherisation does not seem to perform the same function as freezing. Actual freezing for late forcing may not be necessary.

In a paper on "Pollination Methods," Prof. S. W. FLETCHER presented a "symposium" of his own experience, and that of a considerable number of other plant-breeders. The ideal time to emasculate blossoms is as late as possible before the anthers dehisce, but it may be done when the buds are still quite small. If complete accuracy is not essential, and when working on blossoms that do not mature stamens and pistils simultaneously, the blossoms need not be emasculated. In crossing, select mature trees of moderate growth and perfectly sound. On such trees select buds borne high on the outside of the tree on well-nourished branches on the side of the tree opposite from the direction of severe prevailing winds. As to the instruments for emasculating, in the majority of cases a small scalpel is to be preferred, specially for the stone and pome fruits. As to the location of the cut, the general opinion is that it should be made at the insertion of the stamens above the nectary, though the author himself prefers to make it as high up as possible. The safest time to pollinate is near the beginning of the receptive condition of the pistils or perhaps twenty-four hours before. A receptive stigma usually glistens when it catches the sunlight, and in most fruits it is beginning to be slightly brownish.

Brush-pollinating is often most practicable when many blossoms must be pollinated in a short time. For our common trees, however, some workers use the thumb or forefinger. As to the percentage of successes seven pollinators of experience placed their averages variously at from 50 per cent. down.

"Some phases of pollination" were presented by Prof. N. O. BOOTH. The period during which fresh pollen is available for study may be lengthened by forcing twigs in the laboratory. If pollen is taken from the orchard at normal blooming season, it is advisable to take twigs with still unopened buds, and let them open indoors. This assures freedom from foreign pollen. Pollen of the same varieties differs greatly in germination when trees are grown under different conditions. Determinations of the percentage of the germinating pollen is an index to the capacity of such trees for self-pollination in such localities, and hence for plant in solid blocks. Very few Apple varieties have the pollen all good, and none, so far, all bad, most varieties showing different proportions of mixed forms. Pollen from the same tree may differ with the condition of the tree. Tompkins King and Esopus Spitzenburg have notably weak pollen, and are successfully raised only in neighbourhoods where conditions are favourable for pollen production. Varieties with particularly strong pollen, as Johnathan and Ralls, are of wide adaptation, and are often liable to overbear, the fruits being consequently under size.

Prof. FRED. W. CARD presented a "symposium" of experiences as to the advantages of double-working Apples on vigorous stock. The value of top-working to increase hardiness of stock in a trying climate is unquestioned. It markedly reduces injury from certain diseases. Northern Spy especially promises to reduce injury from the woolly aphis in the south. Weak-growing varieties are benefited by the practice. Early bearing can be promoted by top-working on a weak stock, although at the expense of productiveness and, doubtless, of longevity. But for ordinary varieties in favourable regions the advantages of top-working are outweighed by the disadvantages.

Mr. EARLE J. OWEN discussed the importance of selection in plant-breeding, citing several striking examples of its application.

Prof. L. C. CORBETT raised the query, What is to be the future application of the term horticulture? To the already recognised sub-divisions of horticultural interests in America, namely, Olericulture, Pomology, Floriculture, and landscape gardening, the author would add plant-breeding and plant-propagation. Under the latter heading is comprised nursery work and the increasing of annual plants from seed or from herbaceous cuttings.

Mr. H. J. EUSTACE gave an account of investigations on Apple decays in commercial cold storage. Several varieties were inoculated with black rot, brown rot, bitter rot, soft rot, or blue rot, and a species of Alternaria, and at once put in a cold storage under standard temperature conditions, that is, where the temperature was held constantly at 30 to 32 degrees F. At the end of two months none of these diseases had developed except the soft or blue rot. Later, when the inoculated fruit was taken out of storage, the other diseases also developed, showing that the low temperature of the cold storage simply retarded the fungi in their development, but did not destroy them. In another experiment, where the temperature ranged from 37 to 56 degrees, decays developed slowly, except the soft rot; but when the temperature ranged from 54 to 65½ degrees, all decays developed and in most cases very rapidly. Peaches similarly inoculated, and held in cold storage two weeks, had developed decays in about one half of the specimens.

Mr. H. P. GOULD described the recording Phenological date for pomological uses as has been carried on by the U.S. Department of Agriculture for several years past.

HOME CORRESPONDENCE.

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

THE BEDDING IN BATTERSEA PARK.—There is much experimental work of value to the gardener carried on here every year by the superintendent, Mr. Rogers, this chiefly taking the form of new combinations of plants in the flower-beds, and as there are but few examples of geometrical parterres in the park, the comparative failure in good effect of a bed or two never mars the general effect. Such mischances are extremely rare, although some hazardous combinations and risky ventures are made. Nothing but praise can be meted out for the planting of the beds in the "sub-tropical" garden, which remains this year, as always, the showpiece of the whole. A noticeable innovation is the employment of tall plants for the middle area of a large bed with standard Heliotropes, Fuchsias, Solanum jasminoides, Plumbago capensis, and other tall-growing, graceful plants set out at regular distances apart amongst these; next to this, broad bands of dwarfer plants form a border 4, 5, and 6 feet in width, instead of one or two lines, as formerly was universal. As a finish there is usually an edging of one or two rows of quite dwarf things next to the turf. I will describe a capital example of one of these beds, which stands at the corner of the "sub-tropical" on the south-west side. The shape is roughly that of a heart or a bird with extended wings, and may measure 20 feet in width. The middle area is filled with a very tall and strong-growing intermediate Stock, having purple-coloured flowers, widely planted so as to grow to their fullest size, and now just touching each other; placed among these are standard Fuchsias having red flowers, and around this central area is a border 6 feet in width furnished not too thickly with tuberous rooted Begonias, then a broad band of pale blue Viola intermixed with Iresine Herbstii, the colours of the leaves of which make a not too violent contrast with the flowers of the Viola; and the back line consists of a variegated-leaved Pelargonium. Here and there, as relief points to the masses of floral display, are small groups of Kochia, the foliage now green, but which will change to claret-red as the season advances. There are several such beds, each planted in a dissimilar manner and all equally good in effect. It may be here remarked that Violas play a leading rôle in the park this year, being employed as the groundwork plant in some beds, edgings in others; and in the panel parterre, near the botanical garden, near the river, they are planted in oblong sections of about 20 feet in length, the varieties being arranged in opposite pairs. Considering the dryness and heat of the present summer and the steepness of the slope on which they are planted, these Violas are flowering abundantly and promising a rich display for a long time to come. Ivy-leaved Pelargoniums of the Mad. Crousse and Souvenir de C. Turner type are largely made use of in big beds, together with a setting of Violas in variety beneath them. These beds are very charming. Begonias of the semperflorens and floribunda types are much planted in the smaller beds, but tuberous rooted varieties are planted but tentatively, the soil or the air of the district being unfavourable to their well-being as a class of bedders. B. Count Zeppelin, having good-sized crimson-scarlet flowers, is very effective among varieties with fibrous roots. It grows to the height of about 1 foot and has a bushy habit of

growth. The various Palms have come forth from the winter quarters in excellent condition, and they are, together with Musas of species, and Dracænas, arranged so as to form a grade in the "sub-tropical" garden, each specimen being sunk into the turf. Of beds of succulent plants several were noted; the Agave Americana specimens, both green and variegated, being sunk as regards their pots and tubs to half their depth, and mounds then formed round them, these being carpeted with Echeverias, Sempervivums and other dwarf succulent plants. The arrangements adopted with these plants are the best that I have hitherto observed here. A little plant almost dropped out of cultivation, viz., Kœniga maritima, having a dwarf habit and abundant globular white flowers of long duration, is largely employed in small beds with good effect. *F. M.*

APPLE AND PEAR SCAB.—I have read with much interest the contribution on the Apple and Pear scab by Mr. E. S. Salmon in your issue of July 14, 1906. Having gone into the question, especially during the past three years, I beg leave to give the results of my investigations. It is, in my opinion, not an external, but an internal, disease. The cause is in the choice of stock used, the nature of the soil, and the mode of planting. I find the disease is more prevalent, in fact abundant, wherever the subsoil is chalk or of a chalky composition. A Pear tree planted in a soil where there is such a subsoil, and which has been grafted on the common Pear, takes the disease so soon as its roots come in contact with the soil which is chalky, whilst a Pear grafted on the Quince is, I find, always free from the disease, because its roots keep close to the surface. The same applies to the Apple worked upon the Crab; the roots descend, and the mineral properties contained in the soil (of a chalky nature) act upon the constitution of the tree as in the case of the Pear, and the tree becomes contaminated, whereas Apples worked upon the Paradise stock, whose roots keep near to the surface, are always free from the scab. If trees worked upon the common Pear or Crab stocks are desired, the best preventive of disease is to pave the bottom of the hole before planting the tree with slate, tile, or brick in a conical form, so that the water may not hang about the roots. Trees thus treated are kept free from the fungus for a very long time—it may be for several years. Outward washings with insecticides are, I am afraid, useless. The best preventive I know is to paint the infested branches with train oil. I find the disease does not spread from one tree to another through space. In these nurseries there are growing side by side Pears on the common Pear and on the Quince; the former are eaten up with scab; the latter are perfectly clean and healthy because their roots are not in contact with the chalky subsoil, which is the nature and character of the soils in this locality over a vast area. *John Smith, Salisbury.*

YELLOW AND RED RASPBERRIES.—I have a row of Raspberry canes in my garden; they have been in the same place for about six years, and during all that time the fruits have been red with the exception of two plants at the farther end, which were yellow. This year they are all yellow, and there is not a red one amongst them; there are about 45 roots in the row. *J. Pettitt, Corn and Seed Stores, Windsor.* [Assuming that no mistake has been made, the circumstances seem to indicate that the plants have sported. ED.]

HYBRID BELL-FLOWERS.—With reference to Mr. Jenkins' remarks on this subject appearing on p. 28, I may say that I was not aware of the existence of any doubt as to the parentage of Campanula × Hendersoni, and was likewise unaware that any other plants than C. carpatica and C. alliariæfolia had been cited as its progenitors. Mr. Jenkins' copy of the "earlier editions of Nicholson's Dictionary of Gardening" must differ somewhat from my own, as I see therein no such statement as is advanced to support the opinion stated on p. 28. What I do see is C. × Hendersoni placed as a sub-variety of C. carpatica, while the *Century Supplement* gives: "C. Hendersoni (Henderson's), a variety of C. carpatica." Judging from the following remarks appearing on p. 28, I should say that the plant known by me and grown generally by the trade as C. × Hendersoni is not known to Mr. Jenkins. "If, however, C. alliariæfolia is one of its parents, such important features as the hoary tomentum, the type of inflorescence, the form of the flowers, and much of the form, as well as the leaf substance have all been obliterated, which is unusual." But have they? I think not. For editorial inspection, I enclose dried leaves of:—1, C. alliariæfolia; 2, C. carpatica; 3, C. × Hendersoni; 4, C. × Fergusoni; 5, C. pyramidalis. It will be noted that the "hoary tomentum" is almost, if not quite, as marked a feature of the leaves of C. × Hendersoni as it is of C. alliariæfolia, while "the form as well as the leaf substance" have in no sense been "obliterated," but remain as visual evidence of direct relationship, especially when compared with the leaf of C. × Fergusoni (an acknowledged result of the contended parentage C. carpatica × C. pyramidalis), which is quite glabrous and of remarkably thin texture. *E. Horton, Neston, Cheshire.*

GOOSEBERRIES.—In the matter of Gooseberries the consumer has but little choice as regards varieties, the most abundant bearers being alone offered for sale, superior eating qualities being not thought worthy of consideration by market growers. There must be tons of this fruit disposed of weekly in the suburb in which I reside, but were I to ask my greengrocer to supply me with a dish of Red Champagne, Red Warrington, Farmer's Glory, Woodward's Whitesmith, Taylor's Bright Venus, Smiling Beauty, or Pitmaston Greengage, he would regard me as a most unreasonable person, a Gooseberry being to him simply a fruit without any distinctive quality either good or bad. Those I have named are what are called "dessert" varieties, and the first two and Bright Venus may be kept in good condition for two or three weeks after being fully ripe by matting up the bushes, and trained fanwise on a north wall, and protected from the birds, the fruit may be kept in good condition much longer. The variety Red Warrington is one of the best for jam, in this respect excelling the first named. Cheshire Lass has large oblong fruit, skin white, thin and downy, and ripening early. Whitesmith has fruit of a similar shape and colour to the last named variety, and the exposed berries when quite ripe assume a brown hue. It is one of the best flavoured Gooseberries extant. Yellow Champagne has small, almost globular, berries of a pale yellow colour and very hairy. It ripens a fortnight later than Early Sulphur, to which it bears great resemblance, and is finer flavoured. The whole of the above are old inhabitants of our gardens and still well worthy of being grown, as not being excelled by any of the new introductions, although some of these raised by Messrs. J. Veitch & Sons run them very close in flavour and thinness of the skin. *London Suburb.*

BROAD BEANS.—Whilst cordially agreeing with what your correspondent writes in the *Gardeners' Chronicle* last week concerning Broad Beans, I am surprised to find him ignoring the old Cluster variety and especially Beck's Green Gem, a variety of this. The latter is dwarf and bushy in habit, and a profuse bearer far exceeding in the number of the pods per plant any Longpod, Aqua Dulce, or Giant, and the Beans are small in size, as opposed to the large Green Windsor and the others named. Being dwarf, it is a suitable variety for small gardens, or for intercropping with other low-growing vegetables. The plant comes into bearing very early in the summer, and its only fault is the rapidity with which its seeds become aged and mealy, calling therefore for close picking, if tenderness in eating is a *desideratum*. It needs no "topping," like the taller Broad Beans, and if only for its earliness in coming into use, the variety is worthy of the notice of the cultivator, and the pleasant green colour of the Beans when cooked. *F.M.*

CAMPANULA × STANSFIELDI.—We enclose you herewith a photograph of our new hybrid Campanula [not suitable for reproduction, ED.], which the late Rev. Wolley Dod described as the best hybrid Campanula which has yet appeared. The history of this interesting hybrid is not well known. It originated in our nurseries at St. Luke's Road, Southport, some 12 years ago. Its appearance there is quite a mystery. It was quite apparent that the new arrival was different from anything in our collection which numbered some 50 species and varieties. As the plant began to develop and show its character it was quite distinct from anything we had then growing upon our place. The plant is somewhat a slow grower, and it was several years before it was introduced to the general public. Fortunately for the present stock of this plant a few were given to the late Mr. Wolley Dod. He at once planted it in his rock garden where the plant grew much better than it did at Southport, and in the course of a couple of years grew into fine plants which flowered abundantly. The flowers are borne upon thin wiry stems about 6 inches high; they are of a rich violet-purple colour, almost as deep as those of Campanula pulla. Upon the removal of our stock from St. Luke's Road to Kew, Southport, we lost the whole of this interesting hybrid Campanula. In the meantime the Rev. Wolley Dod's plants had grown well. He began to send a few notes both to the *Gardeners' Chronicle* and other papers mentioning my name as the raiser of this unique plant. Mr. Dod was of the opinion that it was a cross between Campanula carpatica, the pollen plant, and Campanula Waldsteiniana, and yet taking more of the character of Campanula Thommasiniana, a name not recognised in De Candolle *Monograph of Campanulas*, although it is a plant well known to Alpine plant growers, and quite distinct from C. Waldsteiniana. In the case of C. Tommasiniana the plant is of an extremely wiry character with pendant pale blue flowers, while those of Campanula Waldsteiniana are always erect and almost flat; both are extremely beautiful and graceful rock plants, and I believe I am right when I say that the late Mr. Wolley Dod had raised both plants from seeds which had ripened in his garden at Edge Hall. During a visit to Messrs. Isaac House's Nurseries at Westbury-on-Trym, I saw several clumps of this new hybrid Campanula. The plants were growing so strong and vigorous that I hardly knew the plants as grown in the south-west of England. It is a plant that delights in plenty of sunshine, and the plants growing at Westbury-on-Trym were doing much better than they do at Southport. The foliage, too, had taken on a new character not uncommon among hybrid Campanulas, namely, a yellowish colour like a well-known form of Campanula G. F. Wilson and also well known in Campanula Haylodgensis. *W. H. Stansfield, Kew Nurseries, Southport.*

Obituary.

ROBERT COCK.—We regret to have to record the death on Sunday last of Mr. Robert Cock, Instructor in Horticulture, Bee-keeping, and Poultry-keeping to the Staffordshire Education Committee. Mr. Cock was an occasional contributor to these pages.

WILLIAM CHESTER.—On Saturday, July 28, Mr. W. Chester, head gardener to the Duke of Devonshire at Chatsworth, passed away suddenly. Deceased, who has lived at Chatsworth for nearly half a century, succeeded to the position of head gardener there on the appointment many years ago of Mr. Owen Thomas to be head gardener at Windsor. The funeral took place on Tuesday last.

JOS. FORSYTH JOHNSON, the landscape gardener, who was well known in London some 20 years ago in connection with the landscape work of the Alexandra Palace, and, previously to that was connected with the Manchester Botanic Gardens, died suddenly in New York, U.S.A., on July 17. Mr. Johnson was suddenly stricken during a period of particularly torrid weather while sitting in the dining-room of the hotel where he had resided for several years. He was taken to a hospital, and died within a few hours. Since leaving England, some 18 to 20 years ago, Mr. Johnson has been engaged in landscape gardening in the neighbourhood of New York chiefly, and nearly always on private estates. We are requested by our New York correspondent to suggest that anyone directly concerned in the affairs of the late Mr. Johnson should communicate with Mr. Patrick O'Mara, 35, Cortlandt Street, New York City, who will be pleased to attend to whatever matters may arise, especially in connection with his family. Mr. Johnson was the author of a work on landscape gardening and was an occasional contributor to this journal.

ROYAL HORTICULTURAL SOCIETY.

International Conference on Hybridisation and Cross-Breeding.

UNDER the auspices of the R.H.S. there has been held during the week an International Conference on Hybridisation and Cross-Breeding, in which many prominent British and Continental horticulturists took part.

On Monday evening there was a conversazione at the Society's Hall, Vincent Square, Westminster, when the delegates from abroad were introduced to their British fellow-scientists. Sir Trevor Lawrence, the President of the R.H.S., welcomed the guests. He said he did so, not only in the name of the Society, but, he was sure, of the whole world who were interested in horticultural pursuits. A few words about the R.H.S. might be interesting to many of the guests. The Society was in the 103rd year of its existence. During that long period it had had many ups and downs. A good many years ago part of its work was to send collectors abroad, with the object of gathering such shrubs, plants, trees, seeds and bulbs as might be considered advisable, but in that respect private enterprise had taken the place of the Society, and it was a matter for congratulation that the Society was now able to devote its energies to guiding and protecting the horticultural interests of this country. The gardening industry of this country was a very important one, and, he might say, was at the head of the minor industries of this country. He was sure they would listen with interest and pay the greatest attention to the papers that would be read to the Conference. They owed a very great deal to the enterprise, intelligence, and sagacity which had been at the root of all the progress that had been made. As illustrating the great strides that had been made he pointed to the display of Begonias at Holland House. He could, he said, point to many other things, but the Begonias were the most immediately striking. The same procedure had been followed in many other classes of plants, fruits, and vegetables, and the general public did not fully realise—as it was desirable that they should—the great obligation they were under to plant-breeders. He had often thought what would have been the position of this country but for the industry and sagacity of the horticulturist. We should be left with a few trees, a few shrubs, and, speaking comparatively, a few plants; but now there was scarcely a garden however humble that did not contain some plants that owed their existence to the intelligence of plant-breeders. He did not think that this country grasped the importance of the subject, and he believed we were very much behind other countries in this respect. Why had that eminent scientist, Dr. Perkin, to take his remarkable discoveries to other countries? He ventured to remind them of Huxley's words that the scientific spirit was more valuable than any of its results. That was the spirit needed in this country, and it was a remarkable thing that the present House of Commons did not contain a single person whose scientific knowledge was worth a ——, and the President snapped his fingers. With regard to plant breeding—and he did not claim to be a scientist—he had devoted a certain amount of attention to the cultivation of Orchids, and he could recommend it as a most instructive pursuit. Before long the supply of Orchids from abroad would cease, and we should be entirely dependent upon our own breeders. There was scarcely a collector who had not got his house full of seedlings. They were all in that position. They were often disappointed; but he only mentioned the subject to show what was being done in that direction. A number of interesting papers had been promised, and it was known that they were of great value, judging by the names attached to them. All the papers would appear fully in the *Journal*. He again extended the welcome of the Council to their guests.

THE CONFERENCE.

The Conference opened on Tuesday morning, when W. Bateson, Esq., F.R.S., V.M.H., President of the Conference, presided over a large gathering.

Sir Trevor Lawrence again spoke a few words of welcome, and said it was quite unnecessary for him to introduce to the meeting so eminent a man of science as their Chairman.

The Chairman of the Conference then rose amid cheers to deliver his opening address, which is printed in full on pp. 81, 82, and 83.

The first paper which was read on conclusion of the President's address was entitled:

"DOES HYBRIDISATION INCREASE FLUCTUATING VARIABILITY?"

Professor Johannsen, of Copenhagen, read a paper on this subject. He said the question of heredity was a very important one, and the results of statistical and other forms of research did not always agree, and it was their business to discover the reason. He regarded statistical data as very misleading, because Mendel's researches could not account for all the problems of heredity, and the question whether evolution was continuous or discontinuous could not be fully elucidated by Mendel's researches. Research showed that discontinuity was a fact in nature.

The Chairman said the problem was one of extreme difficulty. What happened when pure types differentiated by small fluctuations when they were crossed was not known, but there was the suggestion that what took place was the same in animals as in plants.

Professor Plate, of Berlin, said if they took a pure type and kept to self-fertilisation they could not expect variation; but as soon as the outward conditions were changed there would be fluctuation, and Professor Johannsen had not convinced him that continuous variation did not exist.

Mr. G. U. Yule, University College, London, said he had not been entirely won to the professor's views. The data, however, at their disposal was quite inadequate, and they must suspend their judgment.

The Chairman agreed that their judgment must be suspended, and that the answer must come from later generations.

"MENDELIAN CHARACTERS IN PLANTS AND ANIMALS."

Mr. C. C. Hurst, of Hinckley, dealt with this subject. In view of the discussion which had taken place, he said that for the last two years he had been carrying out experiments of the same nature as those of Professor Johannsen. He chose the Dutch rabbit for his subject, but the results had been purely negative. He described experiments he had made with Sweet Peas, and pointed to all the different grades of colour. He thought it would be found that the supposed continuous variations were really discontinuous, and that the continuous variation was merely somatic and altogether apart from heredity. He described one of the Sweet Peas as white, whereupon Miss Wheldale, of Newnham College, Cambridge, asked if what Mr. Hurst described as white was a true albino.

Sir Michael Foster said it was extremely desirable that spectrum nomenclature should be adopted. That would do away with the confusion of calling cream white.

The Chairman asked whether there existed a spectrum nomenclature which ordinary people could comprehend?

Sir Michael Foster said there would be no difficulty about that, and he supposed everyone had seen the rainbow.

Professor Wittmack said much could be done by microscopical investigation. Sir Michael Foster agreed, and Professor Plate mentioned that there already existed a German work giving 700 colours.

[*The Repertoire de Couleurs*, published under the auspices of the French Chrysanthemum Society, a copy of which was procured from the Lindley Library, was here produced. Many other speakers took part in the discussion.]

"ANIMAL BREEDING."

Mr. A. Darbishire, Royal College of Science, London, contributed a paper on "Recent Advances on Animal Breeding, and their Bearing on our Knowledge of Heredity." He illustrated his remarks by basing them on the sexual history of snails.

Dr. Lotsy spoke in confirmation.

MENDEL'S LAWS.

Mr. G. Uday Yule, of University College, London, followed with a paper dealing with "The Theory of Inheritance of Quantitative Compound Characters on the Basis of Mendel's Laws."

The paper was so exceedingly technical, and as no one responded to the Chairman's invitation to discuss the subject, the Chairman observed amid laughter that they seemed to have reached the limit of their capacity to grasp anything further.

In the afternoon meeting on Tuesday the first paper read was one on certain "Complications in Cross-Breeding of Stocks," by Miss Saunders, of Newnham College, Cambridge. She dealt at great length, but very lucidly, on the results of crossing hoary with glabrous stocks; but so technical was her paper that she illustrated it with the following diagram, showing that hoariness could not be manifested in the absence of sap-colour.

Any glabrous sap-colour × any glabrous sap-colour.

|

F1 = all sap-coloured glabrous.

F2 = all sap-coloured glabrous.

Any glabrous sap-colour × any glabrous non sap-colour (white or cream)

|

F1 $\frac{1}{1}$ all sap-coloured hoary.

F2 = 9 sap-coloured hoary: 3 sap-coloured glabrous: 4 non sap-coloured glabrous.

White glabrous × cream glabrous.

F1 = all sap-coloured hoary.

|

F2 = 9 sap-coloured hoary: 7 non sap-coloured glabrous.

Miss Sanders added that there seemed to be a curious connection between flower colouring and the occurrence of doubling.

The Chairman said the matter was very complicated. They had the single variety throwing off the double parent, and yet the double form did not set seeds. There was also the remarkable paradox that a great number of single varieties gave 80 per cent. of double Stocks. That was due to some physiological cause entirely unknown, and he hoped Miss Sanders would succeed in solving the problem.

Mr. Fenn thought it might be the result of planting double Stocks in conjunction with the single Stock, and that gave predominance of the double Stock from the single variety. Whether it was done by the bees he did not know.

Mr. Arthur Sutton said the question of single Stocks giving double flowers was an intensely interesting one. He did not think there was much in Mr. Fenn's theory. There seemed to be something absolutely inherent in the strain. He hoped Miss Sanders would soon elucidate the mystery.

Mr. Dippe, Quedlinburg, said he was still engaged on investigations to discover the effect of sowing Stocks in pots or in the open ground, with reference to the production of double flowers.

Miss Sanders said the suggested explanation that it was caused by planting the double with the single was merely a tradition. The double Stock was absolutely sterile. If they were to get any further results it would have to be through individuals.

Mr. Fenn asked what the bee was doing in the double Stock if there was no pollen? He thought the bee was after the pollen.

Miss Sanders: No, because there is none.

The Chairman: Perhaps the bee goes to try.

Mr. Fenn said he had seen the bee work in the double and directly afterwards in the single, and he should certainly rely upon it as an evidence of cross fertilisation.

M. P. de Vilmorin said there were no practical means of determining which plant will produce double flowers.

Infertile Hybrids.

Dr. John H. Wilson, F.R.S.E., of the University of St. Andrews, Scotland, contributed a paper on "Infertile Hybrids," and accompanied his observations with many beautiful lantern slides. He said the whole history of fertilising hybrids was one of failure. Infertility was the most outstanding feature of hybrids. He would not believe that they had got to the bottom of the subject yet. He had experimented with the following. (A list of Dr. Wilson's exhibits is given in another column.)

Mr. Fenn, who is perhaps the oldest living member of the R.H.S., told how as far back as 1827 he experimented with Potatos, and in 1845 it struck him that if a Pelargonium could be cross-fertilised, why not a Potato? He immediately set to work on the Black Potato, which he received from New York. He was poohpoohed by the R.H.S. of that day, but eventually he succeeded.

The Chairman suggested that they should not get away from the question of the sterility of hybrids.

Prof. Lotsy said they had been hybridising species of Carex in Leyden, and they had never got a single seed. They had tried with thousands of individuals.

Dr. Woordjun, of Groningen, Holland, followed with a paper on the breeding of Canaries.

Hybrid Cattleyas.

Mr. R. A. Rolfe, of Kew, dealt with this subject. The object he had in view he said was to collect together the natural hybrids of the Cattleya group, which had become rather numerous. The cause was not far to seek. Orchids were largely dependent upon insects for the fertilisation of their flowers, and as insects seldom confined their visits to one particular species, the pollen was very likely to be interchanged, and thus hybrids might occur whenever allied species grew together. In this group, as in some others, it was evident that hybridisation was largely a question of opportunity, for hybrids occurred between some of the most structurally distinct species, where they happened to grow intermixed, uniting the genera Cattleya, Lælia, and Brassavola. From a botanical standpoint it was important that these curious intermediate forms should be taken at their true value, for they destroyed the natural limits of species, sections and genera, and in practice it was found that unless their real origin had been recognised from the outset, they had been classed as anomalous forms or varieties, or as distinct species, according to the amount of difference they presented from existing forms. Mr. Rolfe then gave a historical survey of the subject, from which it appeared that the earliest published allusion to the occurrence of a natural hybrid among Cattleya that he had found occurred in 1856; and he went into great detail as to the homes of the various species.

Hybridisation as a Proof of Natural Affinity in Orchids.

Prof. Pfitzer, of the University of Heidelberg, treated this subject in a very technical paper. He said that the natural arrangement of Orchids was not yet quite settled, but he held the opinion that, if it were possible to get a hybrid between two genera of Orchids, they were certainly nearly related.

Odontoglossum Hybrids.

Mr. de Barri Crawshay, of Sevenoaks, gave an interesting account of many experiments he had made, and he showed to the Conference a number of beautifully-coloured plates.

"The Influence of the Parents on the Colour of the Hybrid."

Mr. F. J. Chittenden read a paper on this subject, of which the following is a summary:—

The statement that the colour of the flowers of a hybrid are more influenced by the pollen parent than by the seed parent has very frequently been made, and the belief that this is true is still widely held. Upon this belief is founded the advice often given to choose the flower with the more brilliant colouring as the pollen parent.

Others who have worked at hybridisation have denied that this belief is true, and have brought forward many examples showing the exact converse.

A knowledge of the laws of inheritance is obviously of importance if the work of hybridising is to be anything more than haphazard, and these laws can only be formulated after careful examination of numbers of hybrids. For this reason, and because, in the first place, in the first generation reciprocal crosses usually produce offspring that are as little different from one another as are the offspring of a pure species, and, in the second place, the recent investigations into the truth of Mendel's laws of inheritance have shown that the first law, which states that of certain characters one of a pair only is dominant and apparent in the first generation, is of wide application, the present investigation was undertaken.

The records of 183 hybrids (mostly first crosses), of which the parentage appeared to admit of no doubt, belonging to 67 genera, were carefully examined, and a comparison of the colours of the hybrids with those of their parents made. Of these 183, 19 had parents whose flowers were alike in colour, and of the remaining 164 42 showed a predominance of the coloration of the male in their flowers, 46 showed a predominance of the female, three had characters not possessed either by the male or the female, and the remaining 73 were intermediate in their coloration.

It is therefore concluded that no general rule of dominance of male over female or vice versa, so far as the coloration of the hybrid is concerned, can be formulated; but we must look to the discovery of the dominating characters (which are the ones to appear in the first generation of the hybrids), whether possessed by the male or the female, before any general rule upon the subject can be formulated.

Several other papers were taken as read.

DINNER TO DELEGATES.

A dinner to the Foreign and British delegates took place at the Hotel Windsor, on Tuesday evening. The delegates were the guests of the Horticultural Club. Sir J. T. D. Llewelyn, Bart., President of the Club, presided, and he was supported by Mr. Harry J. Veitch (Vice-Chairman), Mr. E. T. Cook (Hon. Sec.), Mr. Bateson (President of the Hybrid Conference), Sir Trevor Lawrence, Bart., &c.

After the loyal toasts had been duly honoured, Sir Daniel Morris, K.C.M.G., proposed "The Royal Horticultural Society," congratulating the President, Secretary, and all concerned on the great success which had attended their untiring efforts to bring the Society up to its present standard. He alluded to what Baron Schroeder had done for the Society.

Sir Trevor Lawrence responded. He said the Society had been through dark and troublous times, and he gladly seconded all that had been said about Baron Schroeder. Their finances were now on a sound basis; they had a magnificent hall, which cost upwards of £40,000, all absolutely paid for; and they had a garden which was given them by Sir Thomas Hanbury, to whom they were greatly indebted, because it was exactly the sort of garden they needed. Indeed, they were so flourishing, and the membership had grown so, that he feared they would soon have to close the list of members. (A laugh.)

The Chairman then proposed "Our Guests." He said horticulture was useful, elevating, pure, healthy, and progressive, and it was with great heartiness they welcomed around them those who were doing so much to further its interests.

Mr. Bateson was the first to respond. He said he wished he could express some part of what he felt in rising to return thanks for the guests. That was a very different occasion from the one in 1898 when he had the honour of being the guest of the Horticultural Club. Then the company numbered about thirty, and included the members of the Hybridisation Committee. One had only to look round to see how wonderful had been the development since those days, how the interest had increased, as well as the quality of the subjects discussed. That entertainment had been princely. He regretted deeply that Professor De Vries was not with them that night—that professor who in 1898 startled the scientific world by his discoveries. Like many British works of art, he had been absorbed—for the time being—by American enterprise, but, happily, unlike works of art, he would come back. (Cheers.) Then Professor Correns was absent—a gentleman whose name would live as long as science itself. They were very sorry ill-health kept him away; but there were many present that evening who would make that gathering distinguished. When he asked himself the meaning of all that princely hospitality he really could give no answer. He wondered sometimes whether they really had a valid position; but he felt, after all, that science and practice in horticulture should go hand in hand, and they were there that night to declare their belief that the promises made on behalf of that union would yet be fulfilled. He never could believe that all their efforts would be wasted, and there was a solidarity in their union which would last for many a day to come. The great thing was not to promise too much. Science could not do the impossible. They could not get a yellow Pea from a white, or a red from a yellow, if the white and the yellow were non-existent; but if the colours were there, science would get at them. He believed, however, if the scientific were successfully combined with the practical, they would be able to produce something very remarkable. One thing was taught them by science and that was patience. (A voice: "Rather!" and laughter.) He did not refer to that patience necessary to watch a seed grow, but to that patience which was needed when scientists were speaking about matters which were absolutely unintelligible. (Laughter). The present union of science with the practical was most bizarre—each got something from the other. He felt every confidence that that union would last for many years, and would be extraordinarily prolific. The day was past when their subjects would suffer from want of interest. There would be quite sufficient interest to carry them over the dead point, and then their work would become a living reality. If some things could only be understood, he believed that quite a new era for plants and animals would begin. (Loud cheers.)

M. Philippe de Vilmorin, of Paris, M. Johannsen, of Copenhagen, and Prof. Wittmack also responded.

Lieut.-Col. D. Prain proposed "The Chairman," and called for a hearty toast for "a good gardener, a great sportsman, and an all-round English gentleman."

Sir John Llewelyn briefly responded, and thanked Col. Prain, who, their friends would like to know, was a Fellow of the Royal Society, and the distinguished head of the great national garden at Kew—a garden of which they were all exceedingly proud. He also paid what he said was but a well-deserved tribute to their Secretary, Mr. Cook, and to the members of that Club, especially their old friends Mr. Paul, Mr. Veitch, Mr. Bunyard, and Mr. May.

CONFERENCE.—WEDNESDAY.

The Conference resumed on Wednesday morning.

Origin of New Forms.

Dr. E. Tschermak, of Vienna, read a paper on "The Bearing of Hybridisation on the Origin of New Forms." Up to a few years ago, he said, it was the opinion of scientists that hybridisation was of no great consequence for the production of new forms with direct reference to a study of the descent or pedigree. Practical breeders, on the other hand, had long learnt to regard scientific crossings as a means which, in certain cases, influenced the production of apparently new forms. In any case, no sort of general laws seemed to exist. So as to secure even the commercial benefits of lucky accidents, the cloak of secrecy was thrown by many breeders over the origin of their new products. Consequently, even now many forms were wrongly described as hybrids or bastards; and, on the other hand, many novelties, the origin of which was not given, led back with certainty or probability to an intentional or an unintentional cross. Already hybridisation possessed a much greater importance for the formation of new groups from the possibility of a production of new Mendelian combinations of characteristics and component characteristics. The most striking feature in the evolution significant of hybridisation showed itself in the occasional unexpected evolution of wholly new forms through crossing.

Hybrid Rose.

M. Maurice de Vilmorin communicated a note on a new hybrid Rose, a painting of which he passed round for the examination of the Conference, between Rosa rugosa and R. foliolosa, which had the advantage of flowering late in the season.

Mr. Paul congratulated Mr. de Vilmorin on his acquisition.

The Chairman said he should like to ask whether the long flowering was in any way connected with not setting seed?

M. Vilmorin said it was not—it produced good seed.

Professor Rosenberg, of Stockholm, read a most important paper on "Cytological Investigations on Plant Hybrids," and Herr C. H. Ostenfeld, of Copenhagen, followed with one dealing with "Castration and Hybridisation in the Genus Hieracium."

VISIT TO BURFORD.

The Conference then adjourned till the next day to enable the delegates to visit the delightful country seat of Sir Trevor Lawrence, at Burford.

At the luncheon the pleasant duty of proposing the health of Sir Trevor and Lady Lawrence fell to Professor Wittmack, who was full of praise for all that had been done for the entertainment of the guests.

We shall refer in our next issue to the proceedings on Thursday and Friday.

Exhibits Bearing on Hybridity, Law of Heredity, &c.

There were numerous exhibits having to do with the subject of the Conference in one form or another but chiefly on the questions of heredity, and the "dominant" and "recessive" characters in various plants. In most cases there were insufficient particulars given of these crosses for the average visitor to be much interested by them, even assuming that he possessed some knowledge of the subject. The exhibitor knew just why the particular crosses were made, and the value of a knowledge of the results which followed, therefore the final results especially should have been set out together with the bearing it was assumed they might have on the general question. Otherwise the mere enumeration of crosses with the separate results is of little value at an exhibition. They require to be published that the details may be studied by all interested in the subject, but this defect will be remedied when the volume in which the proceedings are to be published is issued

Mr. C. T. Druery exhibited Scolopendrium hybridum, which is presumed to be a natural hybrid between S. hemionitis (?) or S. vulgare, and Ceterach officinarum. Only one plant was found on an old wall in a vineyard near Portozigale in the Island of Lossin (see *Briton's European Ferns*, p. 137). Although presumably a hybrid since it partakes of the characters of both attributed parents, its spores are perfectly fertile and reproduce the type exactly. The plant shown was raised from spores by Dr. Rosenstock.

From Miss Saunders, Cambridge, were contributed many interesting exhibits. Some of these were as follow: Mercurialis annua, to show that plants produced parthenogenetically are all female; seedling Stocks showing that the produce of a hoary crossbred, produced by crossing two glabrous types, were of mixed character—some hoary and others glabrous, also the flowers were very varied—some white, others coloured, some selfs, others bicolors. But those which were hoary and those glabrous appeared to be unaffected by each other, these characteristics apparently remaining unmixed in the individual plants. Some growing plants of Salvia Horminum were shown for the purpose of illustrating that S. rosea (*b*) was recessive to S. violacea (type) (*b*), and S. alba (*c*) recessive to S. rosea (*b*) In the first generation, from seeds obtained from a cross between *b* and *c*, where the white parent contained B two plants were shown which were purple. In the second generation, from seeds obtained from crossing white with pink, where the white parent did not contain B there were three pink-flowered plants to one white-flowered plant In the second generation, from seeds obtained by crossing white with pink, where the white parent contained B there were nine purples, three red, and four whites

Some seedling Primulas were shown by Mr. W. Bateson and Mr. R. P. Gregory, showing that in one dozen plants there were nine palm leaved (dominant) and three fern-leaved (recessive). This proportion appeared in the F 2 (second generation) from a cross effected between the types It may be remarked that the fern-leaved type (recessive) breeds true.

On the subject of inheritance of sex some plants of Bryonia alba and B. dioica were shown to illustrate and confirm the experiments of Correns. Bryonia alba is monoecious and B. dioica is dioecious. Between these species reciprocal crosses give dissimilar results. B. alba ♀ × B dioica ♂ gives ♂'s and ♀'s in equal numbers, but B. dioica ♀ × B. alba ♂ gives only plants which are ♀ except for rare ♂ flowers at bases of stems. All these hybrids so far have been totally sterile.

The rules of heredity were further illustrated by Mr. W. Bateson and R. C. Punnett. There were numerous specimens to illustrate the findings, some of which appeared to be as follow: White Sweet Peas when "selfed" breed true. When, however, a cross is made between certain strains of whites, all the offspring are purple; such purples on "selfing" give purples, reds, and whites in the proportions of 27: 9: 28. White × with another white produced purple, and the purple self-fertilised produced 29 purples, nine red, and 28 whites. On raising a subsequent generation from the F2 plants, the 27 purples are found to consist of four different kinds, namely:—

(*a*). Those giving purples, reds, and whites, 16 in number.
(*b*). Those giving purples and whites, eight in number.
(*c*). Those giving purples and red, two in number.
(*d*). Those giving purples only, one in number.

Similarly among the nine reds there were:—

(*a*). Eight giving red and whites.
(*b*). One giving reds only

(These reds never give a purple, and the whites always breed true)

The chance of a purple coming in the F2 (second) generation is, therefore, 1 in 27, and of a pure red is 1 in 9. Moreover, the composition of each plant is shown by its offspring Consequently, by saving from individuals which are thus proved to be pure, these types may at once be fixed.

A curious case of reversion was illustrated in a cross between White Cupid (round pollen), a dwarf plant of procumbent habit, and White Bush (long pollen), a variety growing 3 feet high. The seedling was very much taller than the taller parent and it had purple colour, being, therefore, both a reversion in height and colour.

An autograph letter from Mendel to Naegeli, referring to experiments with Hieracium, was sent by Professor C. Correns, of Leipzig, and was published in Gregor *Mendel's Briefe*, p. 219

A very large number of crosses with Peas were shown by Mr. R. H. Lock, in which a considerable number of characteristics was illustrated and the dominant and recessive characters proved. Some specimens of Maize grown by the same exhibitor in the Royal Botanic Gardens, Peradeniya, Ceylon, 1902-1904, were also exceedingly interesting, because visitors could easily see the results of heredity in such cases where all the variations are exemplified in each single aggregation of fruits. One curiously proportionate result was a case in which yellow smooth was crossed with white wrinkled, the seedlings containing 25 per cent yellow smooth, 25 per cent. yellow wrinkled, 25 per cent. white smooth, and 25 per cent. white wrinkled.

Messrs. Laxton Brothers, Bedford, exhibited fruits of the Loganberry, and of a cross between the Loganberry and the Raspberry, and other interesting things.

From Mr. G. Yeld, York, come flowers of Hemerocallis Thunbergi (seed parent) and H. aurantiaca (pollen parent), and of a number of seedlings from this cross, &c.

Some coloured drawings of Pine Apple fruits showed by W. Fawcett, Esq., of the Imperial Agricultural Department of the West Indies, represented crosses which had been made with varieties of these

A whole series of crosses between varieties of Antirrhinum involving much detail was shown by Miss Wheldane and Miss Marryat, all giving results bearing on the subject of heredity.

Dr. John H. Wilson exhibited mounted wheats to illustrate what happens when a bearded was crossed with a beardless variety. The segregation showed the now well-known fact that the bearded condition was recessive. The effect of crossing Sugar Pea with Gradus was shown in pods of the first generation, the inner membrane, characteristic of the pod of the ordinary Pea, being seen to be dominant. Amongst crossed Rubi were shown crosses between Japanese Wineberry and Raspberry, Blackcap and Strawberry-Raspberry, Loganberry and Raspberry. A cross between Gooseberry and flowering Currant was also shown. It had never flowered. Dr. Wilson gave, at one of the meetings of the conference, a lantern demonstration of hybrids which he had found to illustrate infertility. He described crosses in Foxgloves, and he found that when the white Foxglove was crossed with Digitalis lutea the resulting hybrid was distinct from that having the purple Foxglove as parent. The reciprocal crosses, too, were also different in many respects. All these Foxglove hybrids were infertile. Amongst Begonias, Dr. Wilson described a number which had refused to flower, others which flowered and bore good seed. In the cross between B. foliosa and B. fuchsioides he found that the hybrid produced progeny like itself, and no evidence of Mendelian segregation. The cross between Rubus occidentalis and R. rosæfolius was quite sterile. The Loganberry was, as was well known, a spontaneous hybrid, bearing good seed.

Mr. R. J. Lynch, curator of the Botanic Gardens, Cambridge, made an exhibit which contained the following plants:—Kalanchoe kewensis, K. flammea, K. Benti; Sarracenia Drummondi × variolaris, good plant, S. Drummondi, S. variolaris; Nepenthes Allardi, raised by E. J. Allard (N. Veitchi × N. Curtisi), N. Veitchi (cut pitchers only), N. Curtisii (cut pitchers only); Begonia × Weltoniensis (Col. T. Clarke's hybrid), B. Sutherlandi, B. Dregei; Senecio squalidus × vulgaris, a weed in the Cambridge Botanic Garden, S. vulgaris and S. squalidus; Aloe Lynchi, A. albocincta, Gasteria verrucosa; Aloe cantabrigiensis, A. somaliensis, A. Schimperi; Cineraria, single plant, containing common garden Cineraria and all the allied species that have been cultivated in the Cambridge Botanic Garden; Kalanchoe grandiflora × Kirki, K. cantabrigiensis, K. grandiflora, K. Kirki; Begonia Pearcei, the parent from which came the yellow colour in tuberous Begonias; Cytisus Adami, branch, C. Laburnum, raised from the Laburnum part and certainly pure Laburnum (raised 1898), C. purpureus (not yet flowered), raised from a corresponding part of Adami; Polypodium Schneideri, P. aureum, P. vulgare var. elegantissimum; Scolopendrium vulgare × Aspl. Ceterach, Clematis coccinea and hybrids, with "Star of India."

Experiments on heredity in pigeons was illustrated by stuffed birds and considerable data from R. Staples Browne, Esq.

From Mr. L. Doncaster came rats' skins and data referring to heredity in respect to colour, and he states assuming that every albino rat is a grey or a black rat with the pigment undeveloped, the general results obtained from the crossings are in agreement with the Mendelian principles. Mr. Doncaster exhibited some very beautiful specimens of the Lepidoptera bearing on the same question.

Ducks were shown by Mr. J. L. Bouhote, and illustrations of colour crossings in mice by Miss F. M. Durham

Dominant and recessive characteristics in fowls' combs were brought out in a series of crosses made by Prof. W. Bateson and Mr. R. C. Punnett, also of colour in Andalusian fowls and in game bantams.

Mr. C. C. Hurst, who contributed the article on the Mendelian Theory published in our pages on March 24 last, p. 187, exhibited skins of rabbits, also of crosses in Sweet Peas and Antirrhinums. The results in the Sweet Peas were somewhat similar to those obtained by Prof. Bateson, but the varieties experimented with were not the same as those he used.

The inheritance of horns in sheep and of face colour was illustrated by data and pictures contributed by Mr. T. B. Wood.

A. D. Darbishire, Esq., exhibited Japanese waltzing mice, and crosses between these and others of the ordinary type.

The Committees.

July 31.—The meeting of the Committees on Tuesday last in the Hall in Vincent Square being simultaneous with the opening of the Hybridisation Conference, this latter event claimed a large share of the day's interest. Many of the exhibits were really conference exhibits, and even in the ordinary contributions from accustomed exhibitors something or other having some bearing on the subjects of genetic variation and heredity was generally included. The display of Orchids was excellent for this late season, and eight novelties obtained the Orchid Committee's approval, four of which were awarded First-Class Certificates, and four Awards of Merit.

The FLORAL COMMITTEE recommended five Awards of Merit to plants which are described below.

The exhibits before the FRUIT AND VEGETABLE COMMITTEE were of small extent.

The attendance during any part of the day was only moderate, but with the hot sunshine directly upon the glass roof the atmosphere of the building was very warm, notwithstanding the lack of visitors, other than members of the conference.

Floral Committee.

Present: H. B. May, Esq. (in the chair), and Messrs. R. Wilson Ker, G. Reuthe, Geo. Nicholson, W. G. Baker, Jno. Green, J. F. McLeod, W. Howe, C. R. Fielder, J. W. Barr, R. W. Wallace, Chas. Dixon, H. J. Cutbush, C. E. Pearson, W. P. Thomson, E. H. Jenkins, R. C. Notcutt, Amos Perry, J. Hudson, and R. Hooper Pearson.

Coleus Pride of Chesham was exhibited by Mrs. W. MATTHEWS, Chesham Park, Anerley (gr. Mr. C. Thrower). The leaves were very narrow, restricted, much serrated, and at a short distance had something of the appearance of a Codiæum. The colours were red and bronze.

Messrs. KELWAY & SON, Langport Nurseries, Somerset, contributed a fine display of Gladioli, in the numerous choice varieties raised by this firm, and showing, as usual, very superior cultivation. Picard, a large flower of salmon-pink colour, with yellow blotches spotted with the general colour of the flower was conspicuous, and of the nnmerous other sorts we can only mention here Mrs. J. W. Skittery, yellow; Agalla, rich rosy-crimson with yellow blotches; Triptolemus, cherry-red; Duchess of Leeds, white with pink blotches; and Lady M. Digby, sulphur coloured with a little richer yellow around the blotches of reddish crimson. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey, exhibited a very fine group of Ivies of the Hedera arborea type, standard and dwarf plants arranged in a corner of the hall where they had a very pretty effect. The golden varieties were richly coloured, and included H. helix flavescens, H. arborea spectabilis aurea, Russell's Golden, &c. The silver and green-leaved H. arborea elegantissima was very bright.

Messrs. H. B. MAY & SONS, Edmonton, put up a very fine group of Ferns, chiefly varieties of their own raising. Nephrolepis were represented by some remarkably distinct forms. N. angustata cristata, N. rufescens Mayi, N exaltata superba, N. exaltata rugosa, N. rufescens falcata, N pectinata concinna and N. cordifolia elegans were all interesting and pretty forms; N. cordifolia crispata congesta, a curious little fern. Osmunda palustris Mayi, Pteris cretica generosa, P cretica grandiceps, P. c. Summersi, P leptophylla princeps, Asplenium Herbstii, A. Mayi, &c. (Silver Gilt Floral Medal.)

Messrs. H. CANNELL & SONS, Swanley, put up a good exhibit of double-flowered tuberous rooted Begonias and some interesting hybrid Fuchsias, also the old variety Venus Victrix from which so many varieties have been raised.

Messrs. SUTTON & SONS, Reading, filled a table with magnificent Gloxinias. The pure white flowers were very fine, and there were also spotted varieties and flowers of various shades of colour, the plants were barely five months old from the time of sowing the seeds, but they were very freely flowered. (Silver Floral Medal.)

Messrs. R. & G. CUTHBERT, Southgate, arranged a large group of flowering plants, including Lilium auratum, L. longiflorum and L. speciosum (lancifolium), good Rambler Roses, Verbenas, Palms, Ferns, &c, interspersed with each other to afford a good effect.

Mr. G. REUTHE, Keston, showed some choice hardy flowers, among them Campanula grandiflora macrantha, Desfontainia spinosa, Lilium canadense, L. superbum, Cytisus nigricans, Veratrum nigrum and other pretty things.

Messrs. J. LAING & SONS, Forest Hill, showed a group of Codiæums, in well coloured plants of a useful size for table decoration.

Mr. R. C. NOTCUTT, Woodbridge, Suffolk, showed a good collection of hardy flowers, including Statices in white, yellow, and blue shades.

Mr. R. HOFFMANN, Tower House, Streatham (gr. Mr. T. Tomlinson), sent a good group of Caladiums, for which a Bronze Medal was awarded.

Varieties of Chrysanthemum maximum were shown by Mr. J. G. HAWLEY, Rotherham, and Mr. A. ANDREWS, Campsea Ashe, Wickham Market.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, exhibited an interesting collection of Roses, chiefly varieties of their own raising, and showing flowers of the parents with them, for instance with Earl of Warwick, The Queen and Mrs. W. J. Grant, the two parents. The hybrid China × Teas were pretty.

Messrs. CARTER & CO., Holborn, exhibited Ten Week Stocks (double) in a variety of colours.

Messrs W. BULL & SONS, Chelsea, put up a group of Hydrangea Hortensia nivalis, a very pretty variegated variety, the white markings being linear and very distinct.

Messrs. R. WALLACE & Co., Colchester, exhibited some choice hardy flowers, including very fine varieties of Montbretias, including the variety Prometheus, also Liliums and Stokesia cyanea præcox, a great improvement on the old form.

Mr. AMOS PERRY, Winchmore Hill Nurseries, had a large group of hardy flowers, including Nymphæas in variety, Campanula grandiflora, Stokesia cyanea præcox, Asclepias tuberosa, Calla Mrs. Roosevelt and Allium sphærocephalum. (Silver Banksian Medal.)

Mr. M. PRICHARD, Christchurch, Hants, also exhibited a large collection of hardy flowers, Kniphofias, Delphiniums, Gladioli, &c., being among the principal species.

Mr CHARLES BREADMORE, Winchester, exhibited a fine collection of Sweet Peas, one of which gained an Award of Merit (see below). (Silver-Gilt Banksian Medal.)

Messrs. CHEAL & SONS, Crawley, put up a nice group of hardy flowers, and in addition Cactus Dahlias were shown in about two dozen varieties.

PERENNIAL PHLOX.

Messrs. T. S. WARE, Feltham, had a showy group of flowers, herbaceous Phlox being the chief feature. Lathyrus latifolius grandiflorus albus, &c, were also well shown.

Mr. PERCY WATERER, Fawkham, Kent, arranged a large, circular group of herbaceous Phloxes in the centre of the hall, it was a well-disposed group, and consisted of the finest varieties. Aurore, Flambeau, Crepuscule, Josephine Gerbause, Mrs. Barr, Fiancée, Delicate, La Cygne, and others were good. (Silver-Gilt Floral Medal.)

Messrs GUNN & SONS, Olton, Birmingham, also made a fine exhibit of the same type of Phlox. Sylphide, Mrs Pemberton, Toreador, Flambeau, Sheriff, Ivory, and Iris were among the most distinct varieties.

The KING'S ACRE NURSERY COMPANY, Hereford, filled a 50 feet long table with Roses put up in large bunches. Some good flowers of various sections were shown, but they suffered much from the excessive heat

CARNATIONS

were shown by several of the trade cultivators of this popular flower. Messrs. WM. ARTINDALE and SON, Nether Green Nurseries, Sheffield, had a display comprised chiefly of border varieties, arranged in bunches with natural foliage, in the ordinary green jars. The flowers were of very good quality, and some of the yellow-ground varieties particularly pretty (Silver Flora Medal). Mr. A. F. DUTTON, Iver Nursery, Bucks, had a display of the tree varieties, mostly those of American raising. The immense shower bouquets of Enchantress and Mrs. T. W. Lawson, slightly depending from tall trumpet-shaped glasses, had an exceedingly good effect (Silver Gilt Banksian Medal). Another collection of similar varieties from Messrs. W. CUTBUSH & SON, Highgate Nurseries, Herts, was associated with border varieties and some excellent flowers of Sault and other Souvenir de la Malmaison varieties (Silver Banksian Medal). Another collection of Carnations at this meeting was one of choice border flowers from Mr. JAMES DOUGLAS, Edenside Nurseries, Great Bookham. These flowers were fresh looking and of very good quality, besides which they represented some of the very best self-coloured sorts, fancies, yellow grounds and other types (Silver Flora Medal). There was still another collection of Carnations, and it was shown by Mr F. M. BRADLEY, Nurseryman, Peterborough. This was the only exhibit on Tuesday in which cut flowers were provided with paper collars. The colours in these flowers were very charming, but they were not enhanced by the collars, especially the pure white flowers. At the back of these were numerous other border varieties, from the same firm, exhibited more naturally in tubes and in Bamboo stands with natural foliage and Gypsophila inflorescence among them.

AWARDS OF MERIT.

Caladium Dorothy Peto, a small-leaved variety with excellent habit as shown. The leaves are very pale rose coloured in the centre, with pea-green margins, the green also extending a little towards the centre in the form of irregular blotches. Shown by Mr. R. Hoffmann.

Nephrolepis pectinata caniculata.—An erect habited plant, with twisted and channelled pinnules, which had also a sort of feather-like growth upon them. Shown by Messrs. H. B. MAY & SONS

Nymphæa atro-purpurea.—This is the richest coloured variety of Marliac's type, having curled anthers, the orange-yellow colour of which is very effective. It is a magnificent flower of large size as well as rich colouring. Shown by Lord HILLINGDON (gr. Mr. A. R Allan).

Stokesia cyanea præcox.—This is a very valuable variety by reason of its early blooming habit, the type rarely flowering before September. S. cyanea præcox grows only about 1½ feet high. Shown by Mr. AMOS PERRY and Messrs. WALLACE & Co.

Sweet Pea Audrey Cuer.—A soft, yet rich-pink coloured variety which has already been described in these columns, shown by Mr. CHAS. BREADMORE, Winchester.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair, and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, R. Brooman-White, H. Little, W. Boxall, A. A. McBean, Arthur Dye, W. H. Young, H. G. Alexander, H. Balfantine, F. J. Thorne, W. Bolton, J. Charlesworth, F. Sander, R. G. Thwaites, H. A. Tracy, and Harry J. Veitch.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a fine group, in which were examples of the handsome Cattleya Warscewiczii Sanderiana, out of which has flowered the handsome C. W. saturata, which secured a First-Class Certificate (see Awards). Other fine hybrids were Cattleya triumphans, a pretty hybrid of C. Rex; C. Prince Edward (Warscewiczii × Schilleriana), a very showy hybrid; Cypripedium Black Prince (Enryades × Rothschildianum), with nearly black lines on the dorsal sepal; the new O. Fletcherianum, which secured an Award of Merit; O. formosum, a large, pure white flower, with light violet blotches; a fine hybrid between O. Rolfeæ and a spotted O. crispum; O. Ioochristyense, and other good hybrids. In the centre of the group was a batch of Odontoglossum Uro Skinneri; and among others noted were Stanhopea saccata; a nearly white Masdevallia Harryana; Miltonia vexillaria J. Gurney Fowler, with very large, white flowers, tinged with pale lilac, &c.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, secured a Silver Flora Medal for a fine group, rich in good hybrids, the best of which was the beautiful Cattleya Claudian (see Awards). In the group were plants of the fine strain of Odontoglossum Rolfeæ, raised at Heaton, and the richly-coloured O. Harryanum augustum and O. Pescatorei, which are the parents; O. Ossulstoni, O. amabile, and other hybrids; Lælio-Cattleya callistoglossa splendens, with a very large and richly-coloured labellum; Cattleya Fabia, C. Lord Rothschild, a fine specimen of the pure white C. Mossiæ Wageneri, several good forms of Phalænopsis Rimestadtiana, the one named aurea having a yellow base to the lip; the rare P. fasciata, yellow, barred with red; P. intermedia Portei and its parents, P. rosea and P. Aphrodite; Cattleya Leopoldi, C. granulosa Dubuyssoniana, Cymbidium Huttoni, Oncidium stramineum, &c.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), staged an interesting group, for which a Silver Banksian Medal was awarded. All the plants shown were raised at Westonbirt. Three are mentioned under "Awards," others composing the group including several remarkably fine Lælio-Cattleya callistoglossa, a nice, light-petalled variety of L.-C. Clive, two L.-C. Baroness Schroder, Cattleya mollis, and two singular hybrids, the one a Cypripedium between C. insigne Sanderæ and C. Maudiæ, but the progeny gives unexpected results, being yellowish in colour with brown markings, and resembling a light-coloured C. Ashburtoniæ; and the other a Lælia between Jongheana and tene

brosa, with very narrow segments of a dull rose colour.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), was awarded a Silver Banksian Medal for a small group of Anaectochili, in which were several very finely-grown Dossinia marmorata (A. Lowii) and Macodes Petola. Mr. MEASURES also showed Lælio-Cattleya Ingrami Ladymeade variety.

Messrs. STANLEY & Co., Southgate, staged an effective group of Dendrobium Phalænopsis, nine plants of Cypripedium A. de Lairesse, Cattleya Harrisoniana, &c. (Silver Banksian Medal.)

Messrs. HUGH LOW & Co., Enfield, staged an effective group, in which were several good Cattleya Mossiæ, one compact plant having 17 flowers, C. granulosa, C. Leopoldi, a brightly-coloured C. Gaskelliana, C. Loddigesii excellens (a finely-coloured variety), Dendrobium Leeanum Enfieldense (of a light rose colour), Odontoglossum Wallisii, Epidendrum Parkinsonianum, E. campylostalix, E. virens, Broughtonia sanguinea, Bulbophyllum Lobbii, Cypripedium hirsutissimum, C. Frau Ida Brandt, C. gigas Corndean variety, &c. (Silver Banksian Medal.)

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Lælio-Cattleya Ihryne albens (L. xanthina × C. Warscewiczii albens), with white sepals and petals, the lip being rose-coloured in front and with an orange disc; L.-C. Miss Gilberta Blount (L.-C. Epicasta × C. aurea), a pretty hybrid, with rosy-lilac sepals and petals, the openly-displayed labellum having an orange-coloured disc, the front and edges of the side lobes being of an intense reddish-maroon colour, darkest around the disc; and Cattleya Eldorado Orange Queen, a very large and fragrant flower, with the sepals and petals light rose-pink, the base and centre of the lip dark orange-coloured. It is nearest to the plant named by the late Professor Reichenbach Cattleya crocea.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), sent Lælio-Cattleya Ira (L. longipes × L.-C. Schilleriana), a singular cross, with narrow, nearly equal segments, the sepals and petals white, tinged with rose, the lip yellowish, with purple front; also Zygopetalum (Promenæa) stapelioides, which was one of the parents of Z. Crawshayanum.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed his Zygopetalum Crawshayanum, which had received an Award of Merit, and the finer Z. C. Theodora, a large, bright yellow flower, with dark, reddish bars on the inner parts of the segments; also Z. citrinum, one of the parents.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed the handsome Cypripedium I'Ansoni, which had previously secured a First-Class Certificate, the bright, purplish-crimson Lælio-Cattleya elegans Proomeana, and the fine L.-C. Atalanta Fowler's variety (see Awards).

Messrs. EDGAR & Co., Montrose, Derby Road, South Woodford, showed a selection of Cypripediums including C. glaucophyllum and C. Kimballianum.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Lord Rothschild Westonbirt variety (Gaskelliana × Dowiana aurea), from Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—A superb variety, with large, fragrant flowers. Sepals and petals bright, dark rose, the front of the broad labellum ruby-purple, the base and centre of a rich orange colour.

Odontoglossum crispo-Harryanum Rosslyn variety, from H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood).—One of the finest, largest, and best-grown hybrid Odontoglossums yet shown. The splendid spike bore 14 flowers. Sepals and petals broad, white, with purplish blotches, the tips of the petals being pale rose. Lip very large, white, with violet blotches on the basal half.

Cattleya Warscewiczii aturata, from Messrs. SANDER & SONS, St. Albans.—A great improvement on the remarkable form described many years ago by the late Professor Reichenbach, and the peculiarity of which consists mainly in the almost entire obliteration of the two yellowish patches seen on the lip of typical C. Warscewiczii (gigas). In this case the flower is of the Sanderiana class, large, bright rose, with the extraordinarily-developed lip of a rich, ruby crimson, darkest in the centre.

Cattleya Claudian (Lüddemanniana × Schilleriana), from Messrs. CHARLESWORTH & Co., Heaton, Bradford.—The largest of the hybrids of C. Schilleriana, and a most beautiful flower. Sepals and petals as large as in Cattleya labiata, rosy-lilac, lip formed as in C. Schilleriana, but much larger, beautifully veined with rose-crimson.

AWARD OF MERIT.

Cattleya Atalanta Fowler's variety (Leopoldi × Warscewiczii), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis).—A very good form and a remarkable colour variation from others of the cross, the flowers having the tints of a good L.-C. elegans. Flowers purplish-rose, with purplish-crimson labellum.

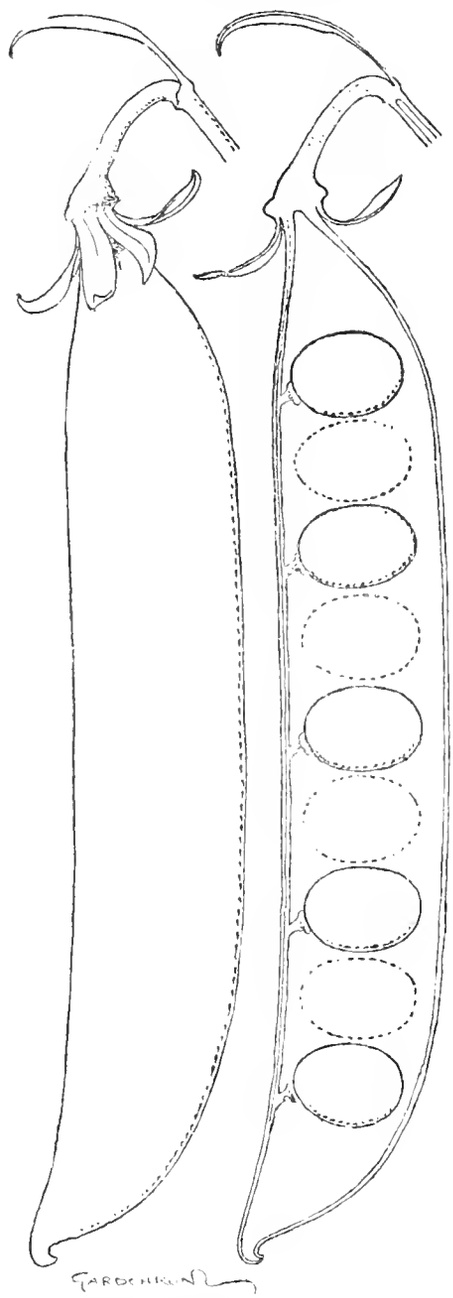


FIG. 38.—NEW CULINARY PEA "QUITE CONTENT," WHICH HAS GENERALLY NINE, AND SOMETIMES ELEVEN, PEAS IN THE POD.

(Shown by Messrs. J. Carter & Co.)

Cattleya Ashtoni Westonbirt variety (Harrisoniana × Warscewiczii), from Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. Alexander).—A very large, rose-coloured variety, the lips having a yellow disc and freckling of purplish rose in front. The fine spike bore four flowers.

Sophro-Lælia Phroso (L. Jongheana × S.-L. læta orpetiana), from Major G. L. HOLFORD.—A pretty addition to these brightly-coloured dwarf hybrid Orchids. Flowers glowing rose-purple, with orange base and crest to the lip.

Odontoglossum Fletcherianum (Edwardi × cirrosum), from Messrs. SANDER & SONS, St. Albans.—A novelty in the group of O. Edwardi crosses of the O. Thompsonianum class, which variety it resembles in all but the cirrosum-like form of the flowers. Sepals and petals dark, reddish-claret coloured, lighter at the apiculate, re-curved tips. Lip one-third shorter than the other segments, formed like O. cirrosum, claret colour at base, rose in front, callus yellow.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq., in the chair, and Messrs. H. Parr, W. Bates, Geo. Woodward, S. Mortimer, Alex. Dean, W. Pope, A. R. Allan, J. Davis, Geo. Kelf, F. Q. Lane, G. Reynolds, J. Willard, P. W. Tuckett, C. G. A. Nix, P. C. M. Veitch, Owen Thomas, and W. Poupart.

Messrs. SPOONER & SONS, Hounslow, exhibited a number of fruits of Apple Early Red Margaret. These fruits were of moderate size, of reddish colour throughout, and perfectly ripe, even mealy.

Mr. EDWIN BECKETT, Aldenham House Gardens, Elstree, exhibited pods of the new variety of culinary Pea named "Quite Content" (fig. 38), also excellent roots of Carrot "Blood Red."

Peach "Early Albert," as grown at Holland House, was shown by Lady ILCHESTER (gr. Mr. C. Dixon).

HORTICULTURAL CLUB.

VISIT TO HALTON AND TRING.

Members and friends of the Horticultural Club had their annual outing on Thursday, July 26th, when a visit was made to the gardens of Alfred de Rothschild, Esq., Halton, and those of Lord Rothschild, at Tring Park. The arrangements, undertaken by Mr. Harry J. Veitch, were of the most complete character, and they were carried out to the letter. The weather was glorious, and there were more interesting things to be seen than the party could possibly inspect in the time at disposal. The company numbered nearly seventy ladies and gentlemen, and the journey to the little station of Wendover was commenced at 10.5 a.m., in saloon carriages, from the Great Central terminus in London. Upon arriving at Wendover, a number of brakes conveyed the party to Halton, about five miles distant, and instead of alighting on reaching the residence, the drive was continued—now under the guidance of Mr. Rothschild's steward, Mr. Hubbard, and his gardener, Mr. Sanders—through some picturesque and shady woods, which, if not remarkable for the large size of their timber, were specially agreeable to the visitors for the sylvan character of the varied scene, and for the views of the district obtainable from the top of the hill. Returning to the residence, the party was invited to inspect the rooms on the ground floor of the dwelling-house, which is remarkable for the valuable pictures and expensive French furniture it contains, all of which are of the brightest description possible.

Emerging from the house the visitors found themselves in the front flower garden, and immediately noticed that the bedding was of the gayest description. For a time there was nothing extremely novel, the beds, many of which were raised, being planted with the usual species of flowering plants, but they were exceptionable for their first-class condition.

Presently, however, as an approach was made to some groups and borders of shrubs, which had smaller borders around them as a fringe, so to speak, gay with bedding plants, an unfamiliar effect was observed. Over the face of the shrubs in one border there were circular patches of pink colour, and over those in another border were patches of deep rose or red colour, and the patches were continued up sloping banks to the top of the highest shrubs at the back. The effect was curious. Everyone wondered what the explanation would prove to be. Were they Roses or what? The present writer hurried across the sward and found that the pink colour was that of Ivy-leaved Pelargonium Madame Crousse, and the rose or red colour also of Pelargoniums, but of the newer and deeper-coloured varieties. The plants were in great wire baskets, supported on pedestals at different heights, just so that the plant and its profuse flowers could peep through the face of the shrubs. The feature was unique, and one stepped back again to take another look. This part of the garden did not appear as if in its

everyday aspect, but more as an exhibition for a particular event. Yet this was not the case. By this time Mr. Veitch hurried the party off to the brakes again, which were to take the members to the pavilion in another part of the estate, where Mr. Alfred de Rothschild had provided lunch. This was partaken of, and a telegram of thanks despatched to Mr. Rothschild, votes of thanks given also to Mr. Hubbard, Mr. Sanders, and Mr. Veitch, and the drive to Tring Park commenced without needless delay, the party reflecting on the extraordinary good condition of everything at Halton, indoors and out of doors.

At Tring, a halt was made at the Hon. Walter Rothschild's museum, which contains very much that is interesting in animal, bird, and insect life. Time was insufficient for anything but the most cursory glance at this extraordinary collection of natural history specimens. Leaving the museum, tea was partaken of, which had been provided by the kindness of Lord Rothschild, and a telegram of thanks was despatched to his lordship. After tea, the party divided, and one part made an inspection of the dairy, Jersey cows, &c., and the other part accompanied Mr. Dye, the head gardener, through the gardens, for which purpose, however, the time was all too short. The same order and magnificence was seen here as at Halton, and the style is even more formal. A magnificent specimen of Cedrus atlantica glauca and another of a Weeping Holly excited general admiration. Those who made a tour of the glass-houses and saw the extraordinary specimens of Phalænopsis, and the excellent condition of the extensive collection of Orchids generally, and other plants and fruit trees, were well repaid. Another long drive to Wendover, and the party entrained again for London, reaching the terminus at 8.45 p.m.

SCARBOROUGH FLOWER SHOW.

JULY 26 & 27.—The first flower show held at Scarborough for many years past took place on the above dates. The show was promoted by a local gentleman to benefit the Scarborough Hospital. The whole of the prizes and expenses were subscribed privately, so that the total receipts will be handed to the institution. The show was held in the Belvedere Gardens, by kind permission of the owner, G. Lord Beeforth, Esq., J.P., D.L. These grounds have an extensive frontage to the sea, and as twelve vessels of the Channel Fleet paid a visit to Scarborough at short notice on the show days, an exceedingly fine view was to be had. Those exhibitors who were up early on the Thursday morning staging their exhibits had an opportunity to see the arrival and anchorage of the fleet.

As the Belvedere Gardens are noted for their collection of Roses, an effort had been made to make Carnations the leading feature of the show.

In the class for a group of cut flowers of American or Tree Carnations arranged for effect, Mr. A. F. DUTTON, of Iver, won the 1st prize. In the same tent an exhibition of cut Tree and "Malmaison" Carnations was exhibited, not for competition, by Messrs. W. CUTBUSH & SONS, of Highgate. (Gold Medal.) Silver Medals were also given to Messrs. G. BOYES & CO., Leicester, and Mr. CHAS. A. YOUNG, West Derby, for non-competitive groups of Carnations.

In the class for groups of Carnations in pots, Messrs. WALSHAW & SON won the 1st prize. In the class for Border Carnations, Messrs. WM. ARTINDALE & SON were placed 1st.

The other outstanding features of the show were the Sweet Peas, the hardy flowers, and the bouqets and baskets. The class for twenty-four vases of Sweet Peas in distinct varieties occupied almost the whole of a 70 feet tent, and although four prizes had been offered, they were increased to six to recognise the merit in the collections shown by the numerous competitors.

The collections of hardy flowers provided a mass of colour in another tent, and here again an extra prize had to be given. The 1st prize was won by Messrs. WM. ARTINDALE & SON.

Very effective trade groups were put up by Messrs. KENT & BRYDON, Darlington, and by Messrs. J. LAWRENCE & SONS, Scarborough, each of whom was awarded a Silver-gilt Medal.

There was only one group of Orchids staged, that by Mr. JOHN ROBSON, but this attracted much attention.

The 1st prize for a collection of six dishes of ripe fruit was taken by Mr. C. CROOKS, of Hadzor, Droitwich.

There were also classes for Melons, Peaches, and Tomatos, which were well competed for.

The show proved to be an exceedingly pretty one, and was held under almost ideal conditions; but the strong counter-attraction of the inspection of the warships had a great effect on the attendance. In spite of this, however, it is probable that the hospital funds will benefit to the extent of about £250.

CARDIFF & COUNTY HORTICULTURAL.

JULY 25 & 26.—The annual show was held in the Sophia Gardens, Cardiff, on the above dates in delightful weather. The show was one of the largest held by the society, and the exhibits generally were of the highest order of merit. The arrangements, carried out by the executive committee and their energetic secretary, Mr. H. Gillett, both for the exhibitors and the general public, were admirable.

In the class for a group of miscellaneous plants, occupying 150 square feet, and in which competition was keener than it has been for several years, Messrs. J. CYPHER & SON were awarded the 1st prize, H. OAKLEY, Esq., Caldicote (gr. F. Wood) being 2nd.

For a group of miscellaneous plants arranged to produce the best effect on a space of 50 square feet, Mrs. EVAN LEWIS, Llandaff (gr. G. Wall) took first honours, and J. HOWELLS, Esq., Cardiff (gr. A. Bloom) was 2nd.

Mrs. LEWIS was also awarded the 1st prize in a class for a group of the same size, from which Orchids were excluded.

The only collection of tuberous Begonias to occupy a space of 40 square feet was shown by W. GREEN, Esq., Cardiff (gr. J. Netford). The same exhibitor also obtained the 1st prize for six tuberous Begonias distinct, with very fine specimens; 2nd, W. EDWARDSON, Esq.

For six plants suitable for table decorations, S. WHITE, Esq., Clifton (gr. J. P. Bruce) was 1st, and Lady HILL 2nd. For six table plants distinct Mr. WHITE was again 1st.

For specimen Fuchsias exhibited in pots not exceeding 18 inches in diameter, Mr. G. N. NURSE was 1st.

Roses were shown exceedingly well, considering the unfavourable weather just previous to the show. In the class for twelve distinct varieties, three blooms of each, and twelve blooms, distinct, of Tea or Noisette varieties, Messrs. J. JEFFERIES & SONS, Cirencester, was 1st with a very clean lot; 2nd, the KING'S ACRE NURSERY CO., LTD., Hereford.

For eighteen blooms of Tea or Noisette Roses, Messrs. J. JEFFERIES & SONS were against 1st, and for twenty-four distinct varieties.

Messrs. JEFFERIES & SONS were awarded the Royal Horticultural Society's silver medal for the best exhibit in the above classes.

In the class for the best collection of Roses shown with their own foliage and buds, and occupying a space of 9 feet by 4 feet 6 inches, the competition was very keen; 1st, Mr. J. C. CROSSLING, Penarth; 2nd, Mr. J. MATLOCK, Oxford; 3rd, Mr. W. TRESEDER, Cardiff.

Carnations and Picotees in a class for twelve blooms distinct were very well shown by Messrs. BLACKMORE & LANGDON, Tiverton; 2nd, Mrs. BROOKS SMITH, Marychurch, Devon. For six vases of Carnations and Picotees, distinct, shown with their own foliage, Messrs. BLACKMORE & LANGDON were again 1st, and Mr. W. J. GODFREY 2nd. For the collection of Carnations and Picotees shown with their own foliage and occupying a space 6 feet long by 3 feet, Messrs. BLACKMORE & LANGDON and Mr. J. GODFREY again won 1st and 2nd prizes in this order. The best collection of hardy flowers was shown by Mr. W. TRESEDER, and the best twelve vases of flowers cut from herbaceous plants came from General LEE, Dinas Powis (gr. W. Horne).

Sweet Peas made a fine show, and occupied the greater part of two large tents. For nineteen varieties distinct, shown with their own foliage, Mr. THOMAS JONES, Ruabon, won the 1st prize, and Mr. HENRY PITT, Abergavenny, was 2nd. Mr. JONES also won the prize given by Mr. R. Sydenham for twelve distinct varieties, and the prize given by Mr. Henry Eckford for the best twelve distinct varieties of Eckford varieties. For six varieties, distinct, Mr. T. JONES won the 1st prize with the varieties—John England, Mary Malcom, Dora Breadmore, Henry Eckford, Helen Lewis, and Dorothy Eckford.

DECORATIVE SECTION.

The 1st prize for a dinner table 8 feet by 4 feet completely laid for six persons was exhibited by Mr. W. TRESEDER, Cardiff, who had a beautiful arrangement of Cattleyas, Odontoglossums, Oncidiums, etc.; 2nd, Messrs. CASE BROTHERS, Cardiff.

Mr. W. TRESEDER had the best hand bouquet, lady's bouquet, bouquet of Roses, two baskets of flowers, single basket of flowers, and lady's spray.

FRUIT.

There was a good display of fruit, all classes being keenly contested. For six dishes of dessert fruits, the Rt. Hon. W. H. LONG, M.P. (gr. W. Strugnell) won the 1st prize with Alicante Grapes, Sea Eagle Peach, Holborn Favourite Melon, Brown Turkey Fig, Humboldt Nectarine, and Large Early Apricot. Mr. H. PITT, Abergavenny, was 2nd. For two bunches of black Grapes, Rt. Hon. W. H. LONG was again 1st.

Vegetables were good all round, the best being shown by Lord ALDENHAM.

TRADE EXHIBITS.

Gold medals were awarded to Messrs. SUTTON & SONS, Reading, for a group of Gloxinias; Messrs. BLACKMORE & LANGDON for cut Begonias; the KING'S ACRE NURSERY CO., LTD., Hereford, for a collection of fruit-trees in pots; Messrs. J. JEFFERIES & SONS for a group of Conifers; Mr. MAURICE PRICHARD, Christchurch, for hardy flowers; Mr. HENRY ECKFORD, Wem, for Sweet Peas; and Messrs. DOBBIE & CO., Rothesay, for Pansies and Violas.

Silver medals were awarded to Messrs. GARRAWAY & CO., Clifton, for hardy flowers; Messrs. DICKSONS, LTD., Chester, and Mr. N. LEWIS, Bridgwater, for hardy flowers, and Mr. VINCENT SLADE, Taunton, for Pelargoniums.

Bronze medals to Mr. A. LL. GWILLIM, New Eltham, Kent, for Begonias; Messrs. JARMAN & CO., Chard, for Centaureas, etc.; and Mr. W. J. GODFREY, Exmouth, for a miscellaneous exhibit.

DURHAM, NORTHUMBERLAND, AND NEWCASTLE HORTICULTURAL AND BOTANICAL.

JULY 25, 26, 27.—This show was held in conjunction with the Northumberland Agricultural Society's show in ideal weather, and there was a record attendance, at any rate, on the first two days. The show was one of the finest ever seen in Newcastle. The competition in almost all the classes was very good, and the exhibits were excellent. The chief feature was constituted undoubtedly by the Roses, those shown by Messrs. HUGH DICKSON, of Belfast, in the collection arranged for effect being of exceptional merit. Worthy of note also were the specimen stove and greenhouse plants in flower, which displayed remarkable cultural ability. When it is considered that all the best plants were grown by enthusiastic pitmen, whose occupation only permits of limited time for the care of their plants, the exhibits were the more praiseworthy. The groups for effect were not so numerous as formerly, and the quality of them was below the usual standard. The hard-working new secretary, Mr. J. Wilfred Pace, and his assistants are to be congratulated, and the larger and more roomy tents secured by the council aided the better display of exhibits.

In the open classes, that for a group of miscellaneous growing plants was won by Messrs. ORD BROTHERS, Newcastle, Messrs. LIDDONS being 2nd. For six specimen stove and greenhouse plants, Mr. J. ELLISON, Cramlington, was 1st, the fine plants of Allamanda grandiflora, Stephanotis, Bougainvillea, Rondeletia, and Clerodendrons being excellent. Mr. E. GARDINER, Dunston, was a close 2nd.

For six table plants, Mr. J. C. McPHERSON (gr. to the Earl of Londesborough), Market Weighton, was 1st, and Mr. J. TRANTER, Hexham, 2nd. In the class for a collection of Roses arranged for effect, Messrs. HUGH DICKSON were 1st, and Messrs. J. COCKER & SONS, Aberdeen, 2nd. For thirty-six Roses in twelve distinct varieties, Messrs. ALEX. DICKSON & SONS, LTD.,

Newtownards, were 1st, and Messrs. HUGH DICKSON 2nd. For forty-eight blooms in twenty-four distinct varieties, Messrs. HUGH DICKSON were 1st; and for twenty-four blooms in twelve distinct varieties, Messrs. A. DICKSON & SONS. For the best twelve Roses of any one variety of H.P., Messrs. SIMPSON & SONS were 1st, and for twelve Tea Roses of one variety.

For twenty-four bunches of herbaceous and border flowers (Roses excluded), Messrs. HARKNESS & SONS, Bedale, were 1st. The best eighteen bunches of hardy flowers were shown by Messrs. GIBSON & Co. For six specimen glasses, each containing six blooms of Carnations, Messrs. J. THOMPSON & SON won the 1st prize. The cut flower classes were all well filled, and there were some close competitions for the bouquets and baskets of cut flowers, &c.

In the fruit classes, it is worthy of note that local exhibitors were particularly successful. This is the more encouraging when it is considered how few of them had previous experience in exhibiting. For a collection of eight dishes of fruit, Mr. J. C. MCPHERSON was 1st with fine dishes of Grapes, Apples, Pears, Peaches, and Nectarines; Mr. J. TULLETT, Raby Castle Gardens, was 2nd.

For four dishes of fruit (Pines excluded), Mr. J. TULLETT won the 1st prize, and Mr. MCPHERSON was 2nd. For four bunches of Grapes, in not fewer than two varieties, Mr. W. ROME, gr. to C. Bewick, Esq., Close House, Wylam, was 1st with fine examples of Muscat of Alexandria and Black Hamburg; Mr. J. TULLETT was 2nd. For two bunches of White Muscat, Mr. W. MARK was 1st; and for two bunches of any other white Grape, Mr. MCPHERSON. Mr. W. MORGAN, gr. to Sir W. Eden, Wendlestone Hall, had the best two bunches Black Hamburg; and Mr. BELL the best two bunches Black Grapes any other variety, with fine bunches of Madresfield Court. Melons, Peaches, Nectarines and Tomatos were also shown well. In a class confined to cultivators residing within three miles of Newcastle for four dishes of fruit, Mr. BRIGGS won the 1st prize.

The best collection of eight distinct kinds of Vegetables was shown by Mr. R. ELLIOTT; and in Messrs. Sutton & Sons' class for six distinct kinds, Mr. KEITH was 1st.

In Mr. Robert Sydenham's competition for a collection of Sweet Peas, Mr. KEITH was an easy first. This class was one of the most attractive features of the exhibition. The whole of the amateur classes were keenly contested, and the display was in every way satisfactory.

There were trade groups (not for competition) from Messrs. J. BACKHOUSE & SONS, LTD., York (Gold Medal); Mr. J. FORBES, Howick (Silver Medal); Messrs. CUBRANS, Altrincham; and Messrs. LAING & MATHER, Kelso.

NATIONAL CHRYSANTHEMUM.

VISIT TO DORKING.

JULY 23.—The members held their annual outing on Monday, July 23, when a visit was paid to Dorking. The party, which numbered about 100, on arrival at Dorking Station at once proceeded to Deepdene. By kind permission of her Grace Lily Duchess of Marlborough, a full tour of these beautiful gardens and grounds was made under the guidance of Mr. F. Chamberlain, the head gardener. The Orchid houses were a centre of attraction, and great admiration was also expressed for the terrace in front of the house, which was very tastefully laid out. The greenhouses and gardens were extremely well kept and reflected great credit on Mr. Chamberlain.

At one o'clock the members proceeded to the Wheatsheaf, High Street, Dorking, for dinner, the chair being occupied by Mr. Thomas Bevan, the chairman of the Society.

The opportunity was then taken of presenting to Mr. G. R. Dean and to the Misses Dean the medals of the Society which had been voted by the executive committee in appreciation of their valuable services both during the secretaryship of their late father, Mr. Richard Dean, and also since his death in August last. Mr. G. R. Dean suitably acknowledged the presentations on behalf of himself and his sisters.

Mr. J. H. Witty, the vice-chairman of the Society, also announced that it was intended to perpetuate the memory of the late secretary by creating a "Dean Memorial Medal," and appealed for subscriptions towards that object. The thanks of the members were then expressed to Mr. J. T. Simpson for his labours in organising the day's outing.

In the afternoon the party drove to Broome Hall, where a halt was made to enable the members to inspect these grounds, the necessary permission having been granted by Sir Alexander Hargreaves Brown. The party were met by the head gardener, Mr. C. Fulchey. The carriage drive was planted with beautiful shrubs in great variety, whilst on the terrace in front of the house were to be seen some magnificent standard Portugal Laurels. On the sides of the carriage road were splendid specimens of Coniferæ, notably Cedrus atlantica glauca, Abies, and Piceas in great variety. The drive was subsequently continued to Ockley, and thence round Holmwood to Dorking, and the party returned to London at 8.30.

ENQUIRIES AND REPLIES.

RICHARDIAS.—Amongst a batch of Richardia Elliottiana, grown from own saved seed, I have one plant quite different from the rest; the leaves are spotted like Elliottiana, but the stems are not mottled like that variety, but are plain green. They are long and shaped like an arrowhead. The flower is white, with a narrow band of violet colour at the base of the bloom inside, not visible outside. Is there any variety coloured exactly like mine? If not, has it any value as a new variety? At the time of saving seed I only had two varieties, the one named and R. africana, so the cross to me seems peculiar unless it has reverted to one of the parents of R. Elliottiana which I am not acquainted with. *Arum Lily.* [The variety is an instance of variation in a seedling, but it is unlikely that it is due to the parent having been crossed with R. Africana, if you have made no attempt to do this. Without seeing the plant we cannot express an opinion as to its distinctiveness, and certainly not its financial value, but it would be interesting to save seeds from it in order to see what variation there will be in the second generation.—ED.]

TEA.—Where can I purchase growing Tea plants (Ceylon or Indian), and what is the market price for them? *Tea Plant.*

THE KEEPING OF APPLES. Can anyone say if it would be possible to keep Apples with any degree of success in the same way (stored in tins and buried in the earth) as advised lately for Potatos. We grow some of the best Apples that are produced in this neighbourhood, but our fruit-room is not one of the best, and we find the late varieties shrivel to such an extent that by Christmas, or before, we have not a good fruit left. Any suggestion would be much appreciated by "*Taylor, Somerset.*"

ANSWERS TO CORRESPONDENTS.

CARNATIONS: *J. E. M.* Judging from the specimens received which were slightly withered, we do not think the variety is superior to existing sorts. You are right in supposing that the seedling might be submitted to the inspection of the Royal Horticultural Society's Floral Committee, but the next meeting will not be held until August 14, in the Royal Horticultural Hall, Vincent Square, Westminster. In any case you would do well to cultivate the plants for another season.

DISQUALIFICATION AT EXHIBITIONS: *E. W.* Presumably you were disqualified for showing two species of plants, in the place of one plant, in one pot, when the schedule asked for six plants distinct. We do not think you have any right of complaint. In respect to the other case you mention, it is necessary to remember that although Oranges are fruits they are borne on plants, and if fruit-bearing plants were not excluded from the class by words inserted in the schedule, the judges would not have acted wisely in disqualifying the Orange tree.

FIGS: *C. J. B.* Your fruits are affected with a fungus, Cercospora Bolleana. Burn the affected fruits and leaves, and spray carefully with Bordeaux mixture.

GARDENER'S NOTICE: *Anxious Reader.* We think you are entitled to a month's notice. Gardeners should always have an agreement on this matter when taking up a situation.

GRAPES: *Mack, Yorks, and F. P., A Subscriber.* There is no fungus disease present. The injury has probably been caused by chill when a deposit of moisture was present on the berries. *East York.* Your grapes are affected with the "Spot" disease (Gloeosporium ampelophagum) so often described in these columns. Burn the affected berries. Next year spray the young bunches with liver of sulphur (½oz. to a gallon of water), taking care not to wet the paint.

LILY DISEASE: *W. H. C.* Syringe the plants thoroughly with a solution consisting of one wineglass of formalin mixed with two gallons of water.

NAMES OF PLANTS: *H. V.* Ailanthus glandulosa.—*J. G.* Convolvulus japonicus albus, otherwise Calystegia pubescens.—*L. C.* From last week. 1, Senecio Fuchsii, Gmel; 4, Teucrium polium, L.—*M. A. W.* 1, Begonia—not recognised; 2, Aristolochia elegans; 3, Gnaphalium margaritaceum; 4, Catananche cœrulea; 5, Adiantum Capillus Veneris imbricatum; 6, Adiantum Weigandi.—*W. F. H.* Spartium junceum.—*Glasgow.* A variegated form of the common Elm Ulmus campestris.—Strawberry next week.—*J. Miller.* Polystichum aculeatum, as far as can be determined from the poor specimen.—*J. M. F.* 1, Gnaphalium margaritæum; 2, Œnothera Youngi; 3, Cimicifuga racemosa; 4, Sidalcea malvæflora; 5, Sidalcea malvæflora var.; 6, Tradescantia virginica alba.—*C. H. P.* Ptelea trifoliolata.—*G. F. J.* Acer Negundo.—*J. C.* Mutisia decurrens.—*Old Subscriber.* The Orchids next week; the shrub is Leycesteria formosa.—*G. H. S.* 1, Cassinia fulvida; 2, Spiræa callosa; 3, Veratrum nigrum; 4, Inula Helenium; 5, Lysimachia clethroides; 6, Cistus ladaniferus; 7, Silene Armeria.—*S. W.* Pancratium maritimum.—*Flora.* Lathyrus magellanicus (Lord Anson's Pea).—*H. A. H.* Mandevilla suaveolens.—*F. H.* We cannot undertake to name varieties of Carnations. Send them to a nurseryman who grows them in considerable numbers and where they may be compared with living specimens.

PEACHES: *Sir B. S.* The fruits were very fine ones of the variety Royal George, but suffered considerable bruising in the post. This variety very seldom develops much colour.

PEAS: *Kerry.* Your Peas are badly attacked with Pea mildew. You can do nothing this year. Do not sow on the same ground next year.

PELARGONIUMS: *Caution.* The Pelargonium cuttings appear to have been planted too deeply. The coloration of the leaves is an indication of approaching decay.

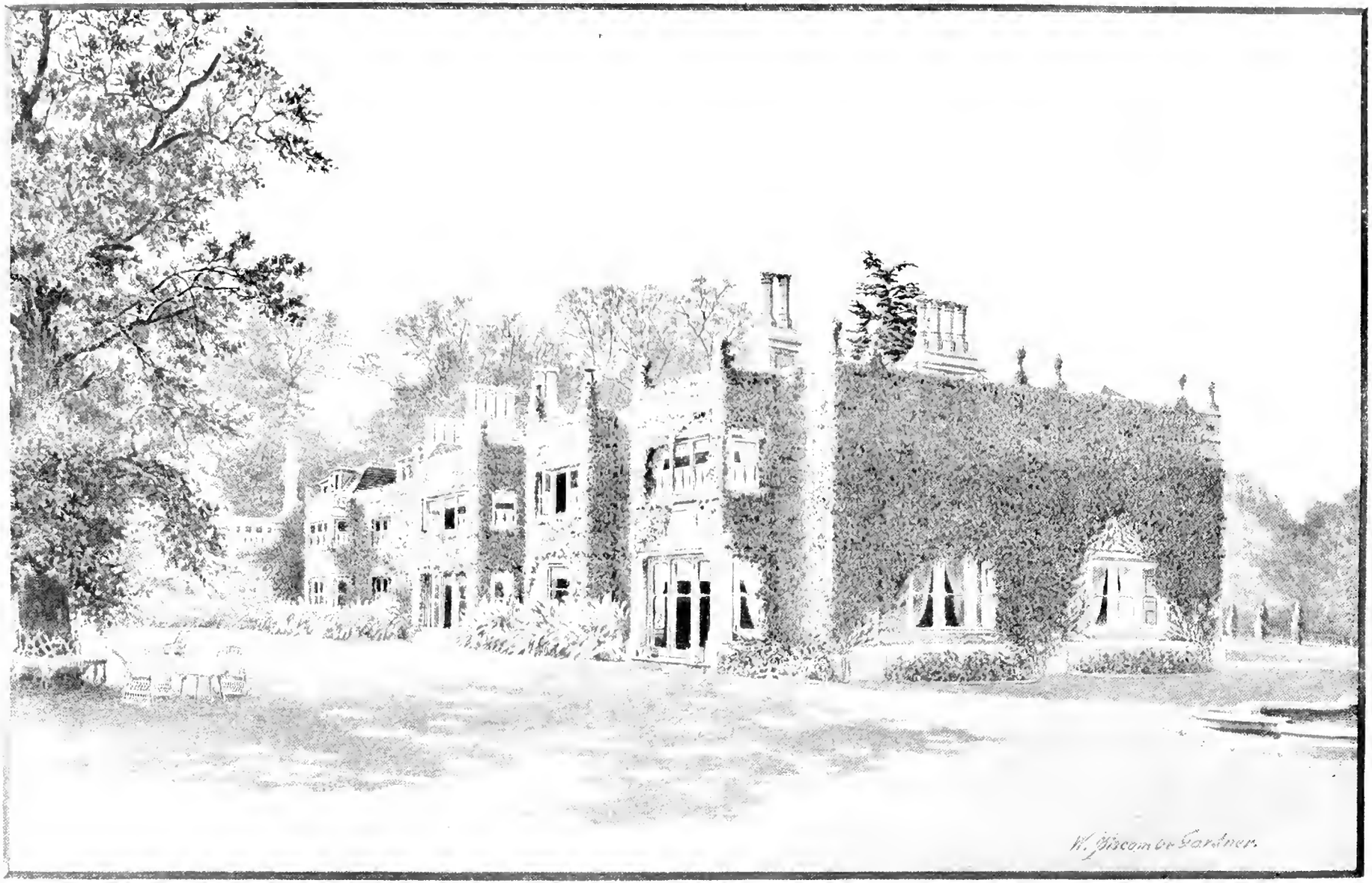
ROSES: *J. S. U.* The appearance of the Rose buds would seem to indicate that the weather in your district has been uncongenial, and against the proper development of the flowers. There are signs also of mildew. Beyond this, however, we have not discovered any disease in the specimens received.

TOMATOS: *R. D.* The fruits are badly attacked with the fungus Cladosporium Lycopersici, frequently described in these columns. You will find a description and illustration of fruits similarly attacked in *The Calendar of Garden Operations*, which can be obtained from our publisher, price 7½d. post free.

TREE CARNATIONS: *J. D. C.* See article in our issue for June 30 last, p. 417. There is also a book to be obtained entitled *The American Carnation.*

COMMUNICATIONS RECEIVED.—F. J. C.—W. B.—A. O., photo under consideration (with thanks)—E. H.—W. G. S.—Scott Crescent—Gooseberry—G. N., next week—Old Subscriber—Flora—Caution—A. v. v. d. G.—W. G.—G. K.—H. S.—W. E. G. (your letter has been forwarded)—Correspondent (many thanks for contribution of 1s. 6d. for Gardeners' Orphan Fund—J. D.—G. C.—J. AW.—W. Crump.—Blick.—W. Primett—North Middlesex International Gardeners' Soc.—H. B. C.—G. F. T.—Quality.—H. R.—W. B. T.—T. H.—W. B.—J. H.—W. J. T.—H. F. MacM.—E. E. Rye—W. G. S. T. H.—J. Spinks—O. T.—A. O. Walker.—A. T.—H. R.—M. W.—F. J.—F. C.—F. B.—W. F. G.—S. A.—A. H.—J. M. S.—N. E. B.—J. S.—D. F.—Chloris.—J. Young.

For Market and Weather Reports see page viii.



BURFORD, THE RESIDENCE OF SIR TREVOR LAWRENCE, BART., PRESIDENT R.H.S. VISITED BY MEMBERS OF THE HYBRIDISATION CONFERENCE ON WEDNESDAY LAST.

M. MAURICE de VILMORIN.

MR. LEOPOLD de ROTHSCHILD.

PROF. JOHANNSEN.

M. A. A. PEETERS.

WILLIAM BATESON, F.R.S.
(PRESIDENT)

PROF. NOEL BERNARD.

PROF. PFITZER.

M. PHILIPPE de VILMORIN.

PROF. WILLMACK.

HYBRIDISATION CONFERENCE.

THE
Gardeners' Chronicle

No. 1,024.—SATURDAY, August 11, 1906.

CONTENTS.

ILLUSTRATIONS.

GUNNERSBURY HOUSE, ACTON.

THERE is a natural beauty in the undulating character of the grounds around Gunnersbury House, visited on Friday, August 3, by the members of the Plant-Breeding Conference. This natural beauty, however, has gained very much from the many years of clever development by Leopold de Rothschild, Esq., who, for the past 28 years, has had Mr. James Hudson, V.M.H., as his head gardener. This development has brought out many charming garden effects, whilst many new garden scenes have been added, each complete in itself. It is, therefore, at the present time a garden of gardens, and is decidedly more interesting than one lacking so many features could possibly be.

Some of the pretty nooks are worked out from Mr. Leopold de Rothschild's own designs, as, for example, the pretty little country Swiss Garden, with sundial in the centre, the idea for which was obtained in a quiet Swiss retreat. More often the new gardens result from conferences with Mr. Hudson, who always superintends every detail of the work. The incentive for making the new and dissimilar gardens on the borders of the pleasure grounds is that no uninteresting nook shall be allowed. Whenever one such is adjudged to be not doing its share in adding to the beauty or interest of the garden it is made to illustrate some new creation of the gardener's art. Thus a plain brick wall has been transformed into the semblance of a ruin of an old castle. The ancient-looking windows, door, niches, and corner tower are now beautified by a host of pretty and fragrant plants in bloom.

At the end of the "ruin" are the tanks, slightly heated from the overflow of the warmhouse Lily tanks, and in which are acclimatised the handsome blue Nymphæa stellata, Berlin variety, now flowering in great profusion. In point of beauty, however, the enormous blue flowers of N. gigantea Hudsoni, raised at Gunnersbury, whose lovely blooms stand a foot or so above the surface of the water, are by far the best.

In the lake beyond, on the margin of which are immense clumps of Bamboos and other tropical-looking plants, the white, yellow, rose, and crimson Water Lilies make a splendid show, some 50 varieties of different shades being now in bloom.

Then there is the Japanese Garden, with its wicket-gates, tea-houses, bridges, and seats of Bamboo cane, very large living specimens of which are interspersed. The gardens are most carefully designed after Japanese models, the stepping stones over the rocky ground and rivulets, and the Japanese lantern, the pigmy Conifers, profusion of Japanese Lilies, Iris, and the Japanese plants and shrubs constituting it quite an imitation of a Japanese garden, although the scene is laid within a short distance of the city of London. Beyond the Japanese garden is the newest feature—a Heath Garden (see Fig. 30), in which, in elevated patches, with a rock-sided, sunken walk dividing the two sections, are planted large quantities of all the best hardy Ericas. The work was commenced four months ago, and already bright patches of Erica cinerea rosea, Dabeocia polifolia, the white bells of D. polifolia alba, and the rosy tints of other Heaths give good effect, which will continue until all are in bloom. The rocky margins are planted with Alpine plants, Mesembryanthemums, and other bright flowers. From the lake a view of the mansion on the highest ground reveals a most brilliant display of scarlet Tropæolum, "Ball of Fire," which runs in three broad bands above the old museum, the terraces having large specimens, chiefly of Eastern trees, such as Pomegranates, Oranges, and Myrtles in tubs. Large scented-leafed Pelargoniums, Agapanthus, and other showy plants are always kept to change the arrangement of flowers on the terrace, and for autumn what might be called movable flower-beds, made up of 20 or 30 plants of Chrysanthemums planted in huge tubs, are found very useful.

At the end of one of the cool, shady walks is the Ivy Garden, in which all the varieties of Ivy are artistically displayed, the sheltered nook being pleasant at all seasons; beyond is a Rose Garden, the main bed in which is of Caroline Testout, some 600 specimens being used in the bed, which is beautifully set with flowers. Other Rose gardens and displays of pillar and trailing Roses follow, then a broad border of herbaceous perennials, and some pretty effects in mixed bedding. In one group Canna King Humbert has heads of large red flowers showing well above the bronzy leaves; in another the Heliotropes raised from seeds make a nice bed; the Pentstemons are bright and of fine quality, Impatiens Holstii of bright cinnabar scarlet colour, and at another point a brilliant display of flowers, chiefly annuals, is seen. Gerbera Jamesoni, the brilliant scarlet "Transvaal Daisy," has been acclimatised, and it makes one of the brightest of summer flowers. Those now in great beauty are seedlings raised from home-saved seeds. Near by the Gerberas are a group of other African bulbs—Crinum Moorei, C. longifolium, and the hybrid C. Powellii and its pure white variety all finely in bloom.

The Plant-houses

are devoted to the culture of showy flowers and of fruits, and the highest success is attained in each branch.

Several houses are filled with Orchids, including Odontoglossums, Cattleyas, Lælias, together with a large batch of hybrid Lælio-Cattleyas, etc. The show of flowers at present consists mainly of a number of the fine blue Vanda cœrulea and some Cattleyas and Lælias. The fine white Dendrobium formosum giganteum is one of the specialities of Gunnersbury House, where it annually makes a great show, and has been grown successfully without interruption for many years. So well is its culture understood that seedlings from imported seeds are germinating freely and making sturdy little plants. Habenaria militaris is sending up spikes of scarlet flowers, Phalænopsis Rimestadtiana has verified the statement that it is the most useful Phalænopsis by growing well and sending up fine spikes of large white flowers, and throughout all the houses the best evidence of good culture is given.

The ranges of vineries, with their heavy crops, tell the same tale of success, a house of varieties of Frontignan, which are favourites with Mrs Leopold de Rothschild, being an unusual sight. Alpine Strawberries are also favourites, and these are grown from seeds. Of the larger varieties of Strawberry which have fruited well this year is a batch which had fruited in April, now being rested to fruit again in September. The Fig-houses are well cropped, and each house has to perfect two sets of Figs in pots each year. As an instance of prolonged good cropping is a tree of Nectarine Lord Napier planted in the house by Mr. Hudson 28 years ago, and which has been always relied on for a crop, the number of fruits borne by it this year being recorded as 350.

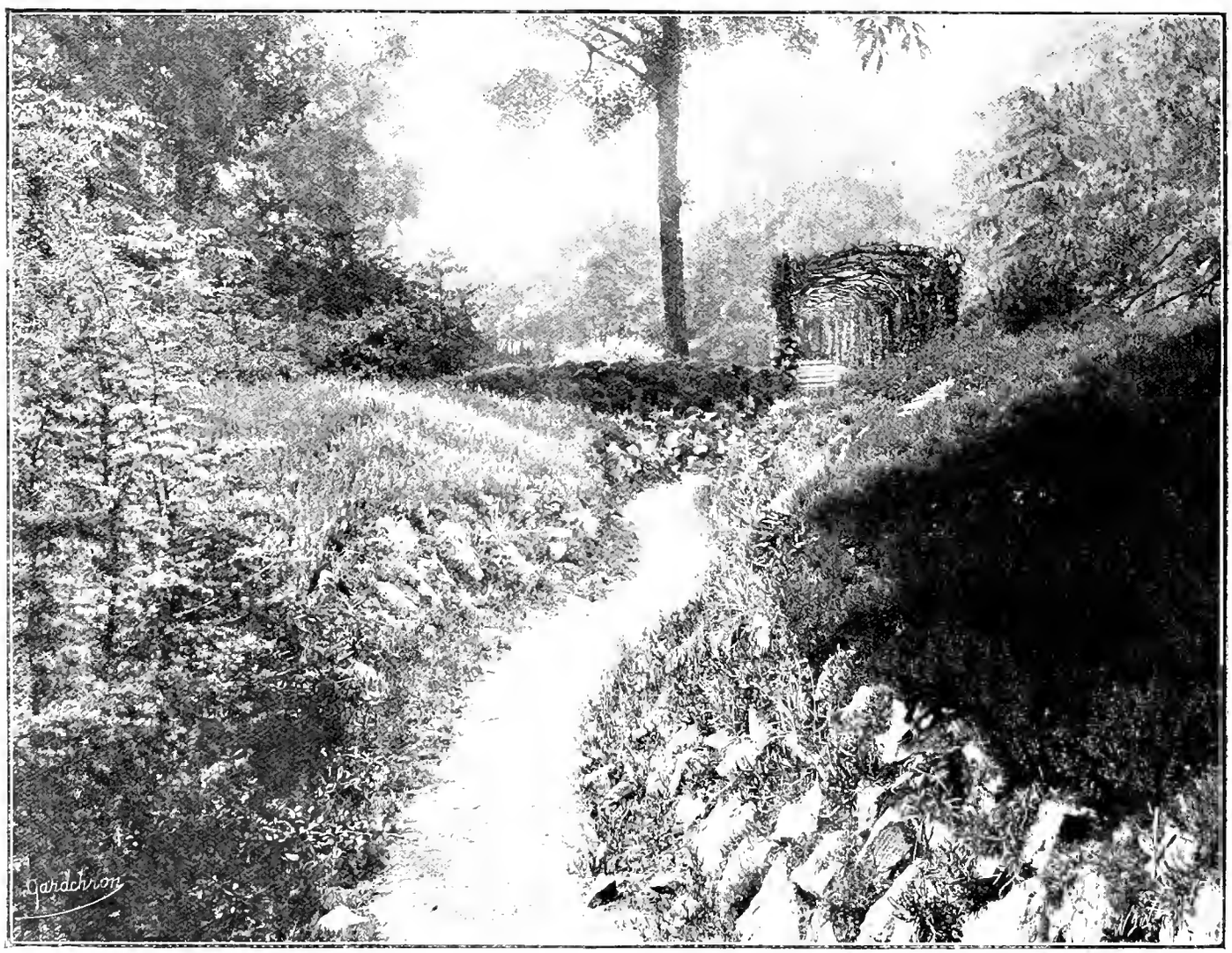
A visit we paid previously to these gardens afforded fresh proof of the satisfactory results obtainable from the cultivation of fruit trees in pots. It is some years since Mr. James Hudson was encouraged by his employer to take a leaf out of the book of Messrs. Rivers and Son, and to try and cultivate specimens of pot fruit-trees similar to those which that firm had

been in the habit of exhibiting at the Temple and other shows. Many of our readers have probably been able to judge from the collections of trees since exhibited publicly from Mr. de Rothschild's garden how apt a pupil Mr. Hudson has proved in this particular branch of cultivation, and we say pupil advisedly, for Mr. Hudson readily acknowledges his indebtedness to Messrs. Rivers for the many useful hints they have given him, and confesses to have imitated their system pretty closely. But it has to be pointed out that experience so necessary in all departments of garden practice is particularly helpful in the cultivation of pot fruit-trees. Consequently the results are

sists of 1,200 trees would cause surprise, for the houses appear to be inadequate for so large a number. Two advantages claimed for this system seem to us undeniable; it affords the opportunity to cultivate in a given space more varieties of each kind of fruit than any other system, and it affords the means of obtaining a longer succession of a particular kind of fruit. Appearances would indicate also that in each house a greater weight of fruit can be ripened than would be possible if stationary trees alone were cultivated. As a set-off to all this it must be admitted that trees in pots give much more trouble than trees in borders, and considerable labour is involved by the necessary

but they are not necessarily put into pots of larger size. Unless it is wished to grow them into larger specimens, the plants are taken out of the pots and sufficient soil is taken away from the roots to allow of fresh soil being rammed all round, and a good layer put over the crocks, even when put into pots of exactly the same size as those from which they were taken. In addition a moderately rich top dressing is applied during the season of growth, generally when the stoning period has been reached

But it is not our present intention to enter into details, for Mr. Hudson has been good enough to write a full account of the system of cultivation he practices, from the building



[*Photo by John Gregory.*

FIG. 39.—THE NEW ERICA GARDEN AT GUNNERSBURY HOUSE.

more satisfactory each year, and we need offer no excuse for again drawing attention to the subject.

As we observed the trees laden with Cherries or Plums, Peaches or Nectarines, and saw the comparatively small amount of house accommodation that exists for the very large number of trees that ripen their fruits therein, we were impressed with the economy of the system, and it would be interesting if Mr. Hudson could tell us how many fruits are obtained from each house in one year. Until it is realised that the trees fruit in succession, and that at all seasons of the year there are many of them out of doors, the statement that the collection now con-

removal of the trees into or out of the house as they are needed for forcing, or when they have ripened their fruits.

There used to be a general idea that fruit trees so cultivated, and therefore suffering the restriction which is essential to the system, were short lived, and even that they were only profitable for very few seasons. We have referred on many occasions to the contrary experience of Messrs. Rivers in regard to this matter, and Mr. Hudson has had similar results. The first trees he purchased are at the present time as fruitful as ever, and give every indication that they will remain so for an indefinite time. The trees are repotted every year without exception,

of suitable houses to the ripening of the fruits, and our readers will shortly have the opportunity of reading this in these columns. It may, however, be pointed out that at Gunnersbury the different successions of fruit necessitate the houses being used for the accommodation of the trees in most instances throughout the year. Early potted trees for early forcing follow the late trees at once. Figs follow the second early trees and others, and nearly complete the entire round of the year. The house is only used otherwise for October and November Chrysanthemums. Melons and Tomatos fill up any spare room. In the Strawberry houses Figs follow at once. The

trees that were fruiting at the time of our visit were heavily cropped, and even those that had yielded their fruits bore testimony of what they had done, for on the labels appeared the numbers "15," "18," or "20," indicating the crop of Peaches or Nectarines that had been gathered from the specimens. We know that more gardeners cultivate fruit trees in pots than was the case formerly, but the system is deserving of so much wider adoption that Mr. de Rothschild does a public service by exhibiting the excellent results obtained in his Gunnersbury garden. Mr. James Hudson, of whom we present our readers with a photograph (p. 105), is a member of the Council of the Royal Horticultural Society, and what may be even more interesting, he was the first student who obtained the maximum number of points at a R.H.S. Examination.

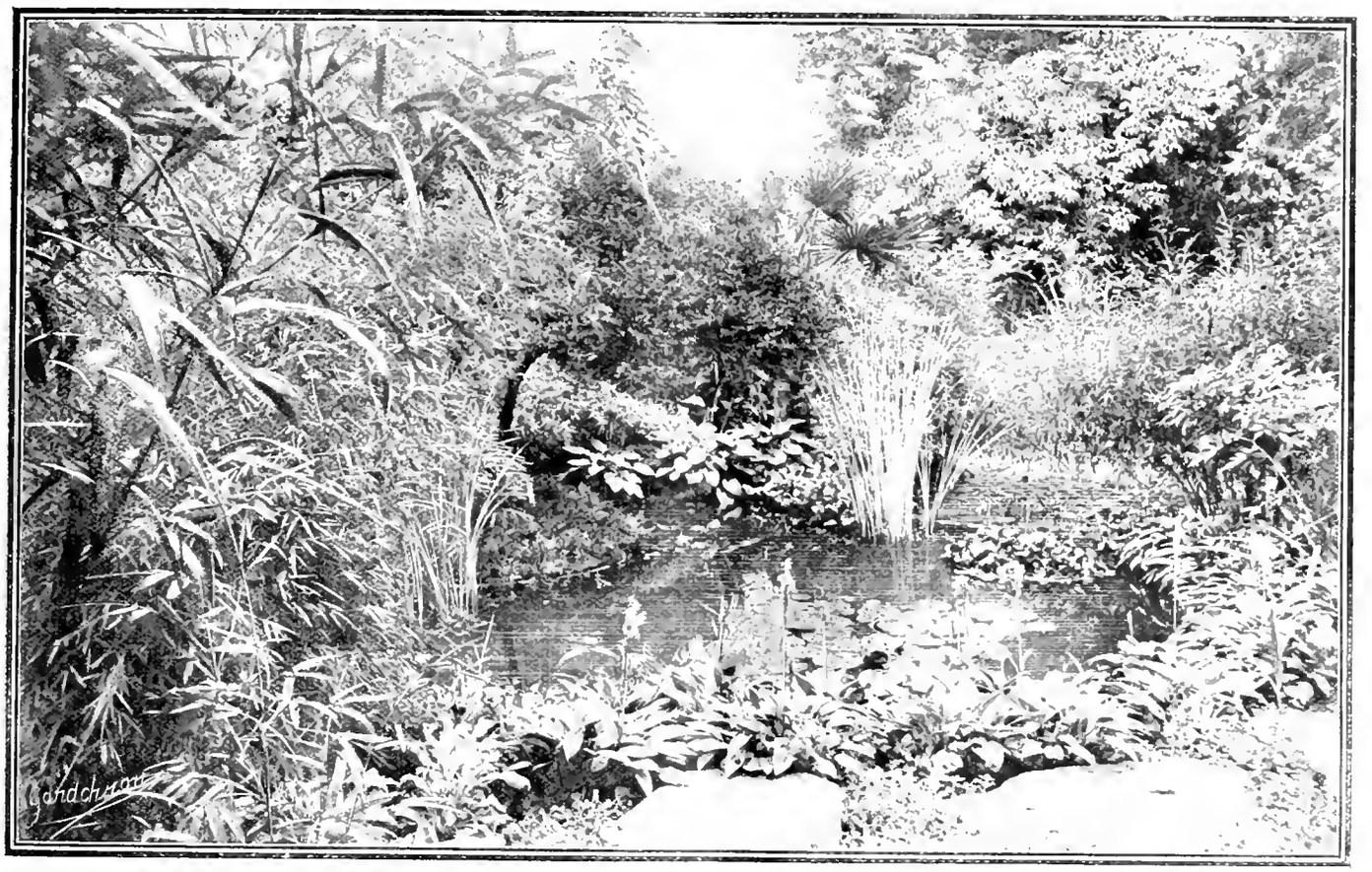


FIG. 40.—A WATER SCENE IN THE JAPANESE GARDEN AT GUNNERSBURY HOUSE. [Photo by C. Heaton.]

(For text see page 101.)

A METHOD OF CULTIVATING STRAWBERRIES FOR FORCING.

THE keynote to success in Strawberry forcing is to have a good supply of early potted plants on hand, with the fruiting pots full of roots by the end of September, and crowns well in evidence before the winter comes on. The Strawberry in a pot, intended for forcing in the spring, does more than half its work before the growing season of the previous year is over, but unless it be given facilities for so doing, one might just as well save the space which it will occupy under glass later on. Plants which have not practically completed their growth in the autumn are next to useless.

The plan usually adopted by forcers of Strawberries is to take the runners of the current year direct from the bed during the months of July and August, or, better still, to layer them into small pots while they (the runners) are still attached to the parent plants, the suckers being severed and the pots removed so soon as the young plants are properly rooted. The plan is good enough so far as it goes, and indeed the method could hardly be improved upon if it be desired to force the plants in their first season. An attempt will be here made to explain a much more satisfactory method of Strawberry forcing, and one which, although it entails longer waiting for the crop, is infinitely cheaper and productive of far better results in the end than any other practice hitherto adopted.

The mode of procedure is as follows:—After the outdoor Strawberry crop is over and the annual cleaning of the beds has been begun, a number of plants, sufficient to yield the requisite number of young plants required, should be left untouched so far as the trimming off of suckers is concerned, and allowed to root their runners into the soil. The ground should of course be kept clear of weeds, and a slight breaking up of the surface to enable the young plants to get a better hold will be advantageous. No further attention is now needed except the stopping of the suckers when they have rooted one, or at most two, sturdy plants. It is as well to bear in mind at this stage of the proceedings that the plants which produce the most suckers are very often the least fruitful. An endeavour should therefore be made if possible to mark the plants which during the past season are known to have cropped well. This knowledge, although it is not absolutely essential, as will be shown later on, will make assurance doubly sure and enable one when the time comes to select only the progeny of the most fruitful plants on the bed.

Beyond an occasional look round to see that the young plants are free from weeds and have plenty of room all round them, they will now need no further thought or care until the period of blossoming arrives in the following spring. The work of selection now begins, and the plants should be carefully gone over so soon as the bloom-trusses appear. All blind or weakly-looking plants should be ruthlessly destroyed, and only those which show promise of abundant fruitfulness be allowed to remain. They must not, however, be permitted to blossom, but each bloom-truss, before it opens, must be carefully removed. If the season be a dry one, an occasional watering, with shallow surface cultivation, will improve the vigor of the plants, which at this time will be concentrating all their strength on the development of roots and leaves.

When July arrives the first real labour in connection with the plants begins, for they must be lifted bodily with a good ball and established firmly in their fruiting pots by the end of the month, or at least by the second week in August. The pots required will be either 32's or 24's, according to the vigour of the plants, but the latter size will in all cases be quite large enough. Let the compost be a good, firm loam, with a liberal admixture of sand and about one part in five of well-rotted cowdung to ensure quick rooting. If carefully lifted the plants need receive no check whatever, but it is essential that, if the weather be dry and the soil hard, a good watering be given two or three hours before lifting.

The rest of the procedure is exactly the same as in the case of ordinary forcing, and it will be found that these year-old plants, which have never been allowed to fruit, will yield a far heavier crop than any runners of the year, however carefully selected and subsequently treated. But there are other advantages in connection with this improved system. The chief of these is that the possibility of blind plants being selected is totally removed, a very important consideration when a large number of plants is forced and house room is at a premium as it usually is in winter time. The percentage of blind plants is by no means inconsiderable on an average, and if these can be left out at the planting, the advantage in room saved is obvious.

Then, again, all the labour of potting up, moving, and constant watering of unproductive plants is entirely done away with, to say nothing of the extra amount of water and fertiliser generally expended upon blind plants before their defects are discovered. There is, indeed, so far as one can see, no single drawback to the improved system, unless it be that the crop hangs about for a couple of seasons instead of only one. But that drawback, seeing that very little extra labour is involved thereby, is well outweighed by the many advantages of the system. *East Sussex.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 64-70.)

(Continued from page 87.)

4. MIDLAND COUNTIES.

BEDFORDSHIRE.—East winds, with the temperature ranging from 25° to 35° during the months of March and April, seriously affected stone fruits, but Apples, Strawberries, and Black Currants are record crops. The soil here is of gaulty clay. *H. Nimmo, Cranfield Court Gardens, Woburn Sands.*

—— The fruit crops are very fair all over Bedfordshire, with the exception of Plums and Pears. I may say this, having had an opportunity on Tuesday and Wednesday, July 17 and 18, of seeing the country from Bedford, Shifford, and Luton, to Hitchin. *George Mackinlay, Wrest Park Gardens.*

BUCKINGHAMSHIRE.—With the exception of Plums and Sweet Cherries the fruit crop here is a good average one. The Plums and Sweet Cherries were very full of promise, but the frosts in April and May destroyed almost the whole of the bloom. Pears fell off when small, being much damaged by frost. There is, however, a good sprinkling of fruit upon most trees. Peaches and Nectarines, Black and Red Currants are good. Strawberries have been abundant and good. *John Fleming, The Gardens, Wexham Park, Slough.*

—— The cold east winds and frost ruined the Pear and Plum crop. The Pear midge also did much damage. *Chas. Page, Dropmore Gardens, Maidenhead.*

—— All fruit trees bloomed fairly well, but the late spring frosts seriously affected the greater portion of the fruit crops in this district; some orchards are absolutely devoid of fruit. Peaches on walls suffered terribly from frost on the night of April 27, some of the wood being killed outright fruits nearly half an inch in diameter were frozen to the centre. Most orchard trees are badly infested with black fly, and in some cases mildew. *W. Hadley Warren, The Gardens, Aston Clinton, Tring.*

—— Frosts, which averaged from 3° to 6° from April 24 to April 30, most seriously affected the fruit crops in the present season. *James MacGregor, Mentmore Gardens, Leighton Buzzard.*

DERBYSHIRE.—The present season's crops were badly affected by continued cold weather during the blooming period, and by extreme drought since. The season has been peculiar in the fact of continuous cold nights without any severe frosts. The thermometer has fallen below 40° Fahr. many times this month (July), and this is only a continuance of the general conditions for months past. *J. C. Tallack, Shipley Hall Gardens, Derby.*

—— Apples are an abundant crop. Pears, Plums, and Apricots are much below the average. Red, White, or Black Currants are plentiful and good. Gooseberries and Raspberries are a good average crop. Strawberries from young plantations were large and of good flavour. Fruit from the older plantations are plentiful but small, and have not ripened well. The soil here is from medium to heavy, resting on gravel. Spring frosts have most affected the fruit crops this season, especially Pears and Plums. *James Tully, Osmaston Manor Gardens.*

HERTFORDSHIRE.—Twelve degrees of frost on April 20 and frequent sharp frosts to the end of the month destroyed the stigmas on every unopened bloom, whether of Apple, Pear, Plum, or Cherry. The soil is a strong loam; sub-soil clay 3 feet, resting on sand. *C. R. Fielder, The Gardens, North Mymms Park, Hatfield.*

—— The first week in July is favoured for summer pruning of hardy fruit; attention is given to laying in suitable growths of stone-fruits at the same time. The general result is good where it is properly done and the characteristics of the various varieties considered. The exceptional mild winter and ungenial spring with sharp frosts almost every night, together with subsequent drought are accountable for the thinness of the fruit crops. The soil in this district is a light loam upon a gravel subsoil; it also embraces a heavy land upon a bluish-grey clay subsoil. *F. W. Gooch, The Gardens, Edge Grove, Watford.*

—— Continuous severe frosts during April and May ruined the crops. The soil is a strong clay. *Edwin Beckett, Aldenham House, Elstree.*

—— In common with the cultivators in most counties, we who live in Hertfordshire have to lament the effects of frost and cold winds that were prevalent quite late in spring. Apples are a good, average crop, but Plums and Pears are exceedingly few. *J. C., Watford.*

Photo by C. Henwood.

FIG. 41.—STEPPING-STONE PATH THROUGH BAMBOO AVENUE AT GUNNERSBURY HOUSE.

(For text see page 101.)

—— The circumstances that have most affected the fruit crops in the present season are spring frosts. *Thos. Rivers & Sons, Sawbridgeworth.*

—— The very cold nights while stone fruits were in blossom completely destroyed our hopes of getting good crops, and with the exception of a good crop of Cherries and a very moderate one of Peaches, stone fruits are quite a failure. Small fruits are a good crop, and the quality is good, while Strawberries have been good in both quantity and quality; nuts are few and poor. *H. Prime, Hatfield House Gardens.*

Leicestershire.—The severe frosts in April during the time stone fruits and Pears were in flower, and the cold north-east winds which were almost continuous during the flowering season of the Apples, are the chief causes of the poor fruit crops in this district. The soil is loam on a subsoil of red clay. *D. Roberts, Prestwold Hall Gardens, Loughborough.*

—— The fruit crops were most injured by frost on April 27, when the minimum temperature on the grass was 18°, and at 4 feet above the surface, fully exposed, 24°. This destroyed half the crop of Gooseberries and Pears, all the Plums on standard trees, also the Damsons. Strawberries and Apples were not in flower, and thus escaped injury. The soil was stiff clay 100 years since, but has been improved by various additions; subsoil clay of the middle lias system. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

Northamptonshire.—Apples, Pears, Plums, and Strawberries all suffered from frosts during the flowering stage. Gooseberries were practically ruined by frost on May 18 when they were almost ready for gathering. Strawberries have suffered much from mildew, following a severe thunderstorm on June 30. *R. Johnston, Wakefield Gardens.*

Nottinghamshire.—The prospects of a good Pear and Plum season were entirely spoiled by the late frosts. When in full blossom heavy rain, followed by 8° of frost on one night completely ruined the crop. *James Gibson, Welbeck Gardens, Worksop.*

—— All our fruit crops are up to the average except Plums, which were badly injured with frost. Being sheltered we get less frost here than is experienced in neighbouring gardens. *James B. Allan, Osberton Gardens, Worksop.*

—— The circumstance which most affected the fruit crops in the present season was the May frosts. The soil is red clay (Keuper marl). *J. R. Pearson & Sons, Chilwell Nurseries, Loughborough.*

Oxfordshire.—Had it not been for the late spring frosts fruit crops of all kinds would have been exceptionally heavy. *J. Broadfoot, Shotover Gardens, Wheatley.*

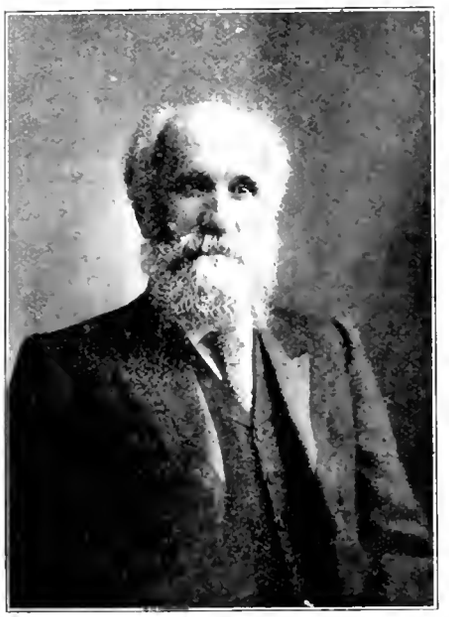
Shropshire.—The continuous north-east winds during April and May seemed to paralyse the fruit crops. On the whole I have a good half crop of Apples, but they are very irregular, some trees I have had to thin, while others have few or none. Of Pears there is only a sprinkling, Plums on walls are about one third of a crop, small fruits are nearly a failure, but Strawberries were a full average crop. *James Louden, The Quinta, Chirk.*

——Frosts in April did most damage to the blossom, especially the severe attacks (10°) on the night of the 26th and morning of the 27th, and when the trees were covered with snow and water, which was turned into ice (half-inch thick) in my garden. I never saw such injury to fruit trees. The most remarkable thing is that the Apple crop escaped so well. Cox's Orange suffered worst—much of the foliage being blackened, as well as the flowers. The soil is sandy loam, with gravel. *A. S. Kemp, Broadway, Shifnal, Salop.*

Staffordshire.—Adverse circumstances this season have been as follows: Apples have suffered from caterpillar; Pears from frost and black spot; Plums from frost and aphis; and red and black Currants from aphis. The surface soil is of stiff loam, and the sub-soil waterclay, interspersed with stones. *George Woodgate, Rolleston Hall Gardens, Burton-on-Trent.*

—— The sharp frost (8°) which occurred on the morning of the 27th April quite ruined the Damson and Plum crops, as the trees were in full bloom at the time, and snow and rain had fallen late on the previous night. The trees presented the appearance of a mass of ice the next morning. *John Wallis, Woore, Newcastle.*

Warwickshire.—The fruit crops are again grievously disappointing, more especially of Apples, Pears and Plums, yet the flowering was everything that could be desired. We have again the far too frequent visitation of spring cold, which no blossom, no matter how strong it may be, can withstand. There are, however, a few estates round here, Barston Hall for instance, the seat of John Roderick, Esq., where they are more favoured, very probably from their higher elevation. I noted at that place good average crops of such varieties as Irish Peach, Cox's Orange, Warner's King, Bramley's Seedling, Jolly Beggar, Newton Wonder, Ecklinville, and Worcester Pearmain Apples. On the Manor Fruit Farm at Knowle, belonging to Edward Tangye, Esq., there is a fair sprinkling of Apples for such a season on the young trees, which are in the best of health and vigour, and this year Mr. Tangye is highly optimistic as to the ultimate result of his Warwickshire venture; his land, which is fairly well sheltered, is of a light loamy texture, resting on a red marly clay formation, on which almost all fruit crops succeed well. Along the road we occasionally see a tree carrying a fairly good crop of fruit, and that is about all that can be said for this



James Hudson, V.M.H.
(See page 101.)

neighbourhood. On July 18 I had the pleasure of accompanying the Birmingham and Midland Counties Mutual Improvement Association in their outing to Batsford Park, the seat of Lord Redesdale; this necessitated a most interesting railway run through Worcester, Pershore, Fladbury, and Evesham to Moreton-in-the-Marsh. During the run through that fruit-famed district I saw nothing better in fruit, perhaps not even so good as we have it here, notwithstanding their warmer soils. The cause which brought about the general disaster to fruit crops was the extreme and continuous cold weather during the flowering period, against which the favoured warm geological formation of the old red sandstone rocks of either Worcester or Hereford, or even of the mixed geological formation of Gloucester, apparently, can afford no immunity, and it is exceedingly mortifying to British growers to find the warm sun of this lovely summer, as well as many others, is wasted on the production of only a crop of luxuriant leaves; whilst America, Canada, and other countries will be pouring their first supply into our markets, carrying away so much money, in which we, for this year at least, can have but small participation. Insect pests have this season been even more mischievous and troublesome than I remember them to have been; not only are they on our Roses, fruit trees, &c., but Oak woods in this neighbourhood, in what ought to have been leafy June, were at that time as naked and as free of leaves as they were during midwinter; they have now recovered, but I think there will be but few Acorns, as there were also last year. *W. Miller, Berkswell.*

Berkshire.—The present is our worst season for the past 20 years, owing to cold winds and late frosts. Our soil is very light, resting on gravel. *J. Howard, Benham Park Gardens, Newbury.*

—— There can be no doubt that the severe frosts experienced in May were primarily responsible for the failure of the Plum and Pear crops here. Most fortunately Apples and small fruits, together with Strawberries, were particularly backward at the time. The soil here is somewhat heavy and retentive, with subsoil of stiff clay. *Wm. Pope, Highclere Gardens.*

Dorsetshire.—The cold winds and frost in the latter part of May mostly affected the fruit crops in this district, but as our garden lays over 600 feet above the sea-level our trees are naturally later than most of those in the district, with the result that our bloom escaped damage. Aphis has been troublesome. Our soil varies, but is chiefly of a sandy nature, with chalky subsoil; in other parts subsoil is of green sand. *Harry Birkinshaw, Chaddington Court Gardens, Crewkerne.*

—— The frost on April 15, 16 and 17, viz., 9°, 8° and 6° respectively, killed much of the bloom on Pear, Plum and Sweet Cherry trees. But the frost on April 27, viz., 9°, finished the work completely on Pyramid Pears, Plums and Gooseberries. To frost alone I attribute the loss of these crops. The soil here is a heavy loam on rocky subsoil of varied depth. *T. Turton, Castle Gardens, Sherborne.*

— The fruit crops are much below average in this district, and this is mainly due to the very cold weather experienced in early May when the young fruits were tender. Apples with a few exceptions escaped and carry a fair average crop. Stone fruits of all sorts are under average. Plums, Peaches and Cherries have about half crops. Of Apricots there are none. Pears are half a crop, but the quantity is good and the trees are clean. The soil is a light loam and vegetable mould on loose sandy gravel. *Ben. Campbell, The Gardens, Kingston House, Dorchester.*

Hampshire.—The unpropitious circumstances this season were frost in April and May with long spells of cold, sunless weather, followed by drought in April, when the rainfall was but 0·63 for the month. Ours is a heavy retentive soil over a 2 feet pan of clay then chalk. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

—— The frosts of April 14, 15, and 16, were the chief cause of the Plum, Pear, Apricot, and Gooseberry crops amounting as they do to little more than nothing. Our soil is stiff clayey loam on a subsoil of London clay. *A. G. Nichols, Strathfieldsaye Gardens.*

—— The failure of Pears and Plums this season is due to the severe frosts when the trees were in flower: during the month of April we registered a total of over 50° of frost, and on several nights in May we had 4° and 5°. Our soil is very light, resting on gravelly-clay subsoil. *J. Wasley, Sherfield Manor Gardens, Basingstoke.*

Kent.—Continued cold winds from the east when the trees were in bloom has most affected the fruit crops here in the present season. The soil is fairly stiff, with a subsoil of "pinnick." This latter is red, very stiff (much like clay), and is full of small stones. *G. Woodward, Barham Court.*

——Spring frosts—continued low temperature—both in the flowering and setting time, caused much destruction to all fruit crops, excepting Apples, which are partial, but splendid in our nurseries. Strawberries have been the best soft fruit crop where they escaped the May frosts. Our soil is sandy loam over Kent ragstone. *George Bunyard, Maidstone.*

——Probably the frosts on April 20, 24 and 26, and hail on the 26th were most harmful to Plums, Cherries and Pears. There was no frost while the Apples were in bloom. The following low temperatures occurred in April (Kew verification):—(Sheltered): 20, 32°, 24, 30.8°; 26, 32°, 29, 32.8°. (On Grass): 20, 30°; 24, 30.8°; 26, 29°; 29, 29°. The soil is a strong clayey loam, resting on the outcrop of the lower greensand or Kentish rag, and much mixed with large and small stones. *Alfred O. Walker, F.L.S., Ulcombe Place, Maidstone.*

——The failure of Plums in this district is owing to the flowers having been few and weak. Late frost and continued easterly winds most affected Pears. Apples are plentiful in situations having a western aspect. Some Apple orchards facing east have unsatisfactory crops, though the trees flowered plentifully. *Geo. Fennell, Boarden, Hadlow Road, Tonbridge.*

Middlesex.—The severe frost in May, followed by east winds, greatly injured the tender foliage. Black Fly has been most troublesome. Our soil is very light, resting mostly on gravel, and requires much feeding and moisture-mulching in such a case is most important. *Geo. Withes, Syon House, Gardens, Brentford.*

——Apples in some instances have heavy crops, but they have suffered very much from drought. Peaches and Nectarines are excellent—this I attribute to the strength of the flowers through keeping the trees thinly trained, free of insects, and the trees were not allowed to carry too heavy a crop of fruit last year. We protected the trees heavily during the late spring frosts. Other fruits, with the exception of Pears, are very satisfactory. A few of the large blooms and buds of the Strawberry got nipped, but, notwithstanding, the crop of fruits was very satisfactory. Givon's Late Prolific should be cultivated in every garden. Our soil is of a sandy nature and not very deep, resting on gravel. Heavy top-dressings and mulchings are therefore very essential. *H. Markham, The Gardens, Wickham Park, Bromley.*

——Aphis has this year been worse than I have ever known it to be, and more difficult to eradicate. Our soil is of light loam, with gravel subsoil. *James Hudson, Osterley Park.*

Surrey.—Late spring frosts destroyed all the Apple, Pear, and Plum crops, which promised to be exceptionally good. The soil is very sandy and the subsoil also sand. *S. T. Wright, Royal Horticultural Society's Gardens, Wisley, Ripley.*

——Heavy mulching and strawing down very early preserved the moisture in a naturally dry soil, so that our Strawberry crop was exceptional. Plum trees here set a very heavy crop, but the majority fell after attaining the size of Peas. I consider the pollen was affected by the frosts and east winds experienced then, so that it could not properly perform its functions. The soil is chalky loam, on a chalky subsoil. *W. P. Bound, Gatton Park Gardens, Reigate.*

——The blossom on Plums was enormous, but the frost took it all. The same applies to Pears standing in the open, but the wall trees are bearing a half crop. *W. Wilks, Shirley Vicarage, Croydon.*

——The fruit crops were considerably affected, not only by the late frosts, but by the severe north-east winds, which prevailed for such a long period. The soil here is exceedingly light and sandy, resting on a subsoil of pure sand. *Wm. Howes, Cobham Park Gardens, Cobham.*

(To be continued.)

NURSERY NOTES.

THE OLD NURSERIES, CHESHUNT.

The words Paul and Roses are almost synonymous terms. We should not like to compute the number of beautiful Roses to which the prefix Paul's could be added, but this perhaps is not to be wondered at when one remembers that for about 100 years this famous house has been sending out, year after year, new varieties: some, perhaps, of more value than others, but collectively enough to furnish a Rose garden in themselves. The nurseries—for there are four of them—comprise an area of over 150 acres of ground, and herein are contained Roses in their thousands, of almost every conceivable variety and species. Fields of Roses, walls of Roses, banks and pergolas glowing with Roses, some trailing over banks, others sweeping their graceful wreaths of flowers from tall standard stems, the so-called Rose-garden with its severely geometrical design, miniature rock garden species, such as R. Wichuriana variegata, and another which is beautified by reason of its curious-coloured spines in contradiction to its near neighbour R. alpina, the thornless Rose; the so-called Scotch Roses, the China, Moss, Evergreen, and a host of other things that must bewilder even the most ardent Rosarian, and require a lifetime and the enthusiasm of such a man as George Paul himself to master. Nothing is perhaps more striking than the difference of habit and growth seen in the varieties; some form large trees, others are mere pigmies. One plant of Rosa rugosa rubra measured seven good paces through each way, seven yards of tangled growths bearing large, white, single flowers in countless numbers.

Let us first consider the newer Roses, for in this Rose mart is gathered all the newest and best from all sources. To commence with, Dean Hole has a fine pyramidal centre and perfect form, the colour being a mixture of salmon and carmine, a charming blend. The habit is vigorous and free-flowering. Mad. Theodore Roosevelt is of a pale-blush tint, resembling a beautiful light-coloured La France. The Dandy, a dainty little flower of dark crimson colour, was raised from Bardon Job. A pocket edition of its parent, it is just the thing for use as a button-hole flower. Cherry Ripe is a bright-coloured Hybrid-Tea Rose, with colour suggestive of its name—a cherry crimson. It possesses all the qualities needed in a bedding or a forcing Rose, and is recommended for market purposes. S. M. Rodocanachi is a great beauty of a lovely salmon-rose shade, and is becoming well known. David Harum is also already familiar to many of us, although it must still be considered a new variety. It is of American origin, and a not unworthy alien. The breed is Hybrid Tea, and it has size, form, and colour to commend it. The last-named attribute is rosy-pink. It is very free in blooming. George Laing Paul is perhaps the finest H.-T. yet raised, a very fragrant flower erect on long stalks, that display the blooms well above the vigorous foliage. The colour is deep carmine—almost crimson, and the flower is shapely. Florence Pemberton obtained the Gold Medal of the National Rose Society in 1902. A pink flower with plenty of petals, which overlap and reflex in perfect form, entitling it to be classed among exhibition varieties. Richmond takes its name from Richmond, the American city that supplies us with another luxury of the vegetable world. It was raised by Messrs. Hill of that place. Extreme floriferousness is one of its desirable characters; in addition it is fragrant, good in form, and is carried on tall, stiff stems. The colour is bright red. Etoile de France we must pass over, for, although good otherwise, it has the bad quality known as "burning." Hon. Ina Bingham has also a defect, for although its petals are of exquisite tint and very large, it is not of sufficient fulness to place it in the first ranks. Countess Annesley and Countess of Derby are both H.T.s of a salmon shade; the latter has a most perfectly shaped bud.

Nellie Johnstone is a grand new Tea Rose raised by Mr. Paul from Mme. Berkeley × Catherine Mermet. It more resembles the first-named progenitor, but is a little fuller, and of a pink shade. M. H. Walsh perpetuates the name of the famous American raiser, who has given us such fine things as Hiawatha and Lady Gay. It is a H.P. of rich velvety crimson colour, very large in size, and worthy a place among the best of new Roses. Tea Rambler is a decided novelty, and has resulted from the crossing of a Tea variety with a climbing Rose. It is one of the most beautiful Weeping Roses, with exceptionally strong growths, upon which it produces clusters of flowers in profusion. The colour is a deep coppery pink, which changes with age to a paler shade. Other good climbing or pillar kinds are the well-known Lady Gay, here quite fulfilling the good reputation it has; Una, a creamy white-flowered Rambling Briar; Trier, with dense clusters of creamy-white blooms, and The Lion, with flowers of a bright crimson shade. We may here remark in passing that of all these charming climbing Roses now so popular none was more beautiful than Wallflower, not new indeed, but with scarcely a peer among a galaxy of its kind. Mad. Paul Olivier may best be described as an improved Georges Nabonnand. Mons. Paul Ledé is a vigorous H.T. of a beautiful buff orange shade, with a suspicion of rose. The large J. B. Clark, the flower of last year's National Show, whose huge petals are maroon scarlet, was in its full beauty. Elisa Robichon is one of the Wichuriana Roses with petals of a soft yellow shade. Mad. J. Gravereaux is a climbing Tea Rose—a flower of good shape with yellow buff-coloured petals. A plenteous succession of flowers are produced, and it forms a capital variety for wall-covering. We will conclude our notice of the newer Roses with mention of Messrs. Paul's H.T. Lady Battersea. The flowers are light crimson with an orange-coloured base, and they are produced on tall, straight stalks, a valuable feature in a Rose for cut purposes.

Interesting Species.

As is to be expected in a nursery so largely devoted to Roses, there is an interesting collection of rare and peculiar species. The green Rose R. viridiflora cannot be termed a beauty, and few would care to afford it a place in their Rosary, but the thornless Rose R. alpina, being without thorns, is surely perfection indeed, and the double-flowering form is not to be despised from a decorative point of view. Then there is its antithesis R. sericea var. pteracantha, which is all thorns and bristles; indeed, the long, flattened decurrent spines are extremely handsome when in a young state, and with the sun on the opposite side of the beholder they glow a beautiful ruby-red.

The tiny Wichuriana variegata we have already mentioned: its foliage is slightly scented. Rosa rubifolia bears the handsomest foliage of all the genus Rosa, and should find a place in every collection for its ornamental wood and foliage alone. These are coloured red, and are admirable for mingling in vases of cut Roses, or indeed of any flowers. Another—R. lucida (syn. R. nitida)—has also ornamental leaves and wood. The leaves are shining and tinted red; R. lucida "Vivid" turns a lovely

colour in the autumn. R. setigera might easily be mistaken for a Raspberry, so much do the canes and leaves resemble that plant. Rosa rugosa is seen in many forms; some have been crossed with H.P.s to improve the flowers, but the old type is unsurpassable among Roses for its charming fruits in the autumn. R. Andersoni is one of the so-called perpetual flowering kinds; its single pink coloured flowers possess much merit. Rosa Kazanlik we should probably pass by, but the flower that furnishes Attar of Roses cannot be thus slighted; and, after all, one cannot judge of merit from appearances alone.

We see here also the old Cabbage Rose of our cottage gardens; the parti-coloured Rose—York and Lancaster; and Rosa mundi, which is more often sold as the York and Lancaster Rose, and which is probably the better of the two; the old Maiden's Blush, a great favourite still; the big leaved R. macrophylla, which has foliage more like an Acacia than a Rose; the Boursault Rose (R. alpina) Morletii, a vigorous climber; the strong growing R. Brunonis, with single white flowers and fine glaucous foliage; and a host of others.

The collection of ornamental leaved trees and shrubs in these nurseries is remarkably rich and varied; the 50,000 fruit trees, the Conifers, or the thirty plant-houses, all filled with general nursery stock, would each require a separate note to do them justice.

THE CRAVEN NURSERY, CLAPHAM, YORKSHIRE.

The Craven Nursery at Clapham, in Yorkshire, is now well known to lovers of Alpine flowers, especially to those who have an opportunity of seeing the exhibits made by the nursery at the Temple and other shows, where tastefully-arranged rockwork displays to the best advantage the flowers which are the speciality of the nursery—the best of the plants suited for the rock garden. Its situation is not particularly convenient for the traveller, lying, as the charming village of Clapham does, upwards of a mile from the station, which is itself on a cross-country line, the branch of the Midland from Settle to Carnforth, &c. For the growth of Alpine plants, however, the nursery is admirably adapted, being well up on the high ground close to Ingleborough, and in a district where many good British Alpine plants have their native habitats.

A recent sojourn in the district enabled me to pay a short visit to the nursery, which is under the care of Mr. George Redmond, an able cultivator, keenly interested in the plants he grows. The bulk of the Alpines are cultivated in pots for convenience of sale; but a rock garden, constructed with the natural stone of the district—limestone—serves to show what the plants will be when planted out in congenial surroundings, and is an object-lesson for those who wish to construct one of the same character.

Prominent among the plants in pots was Daphne rupestris or petræa, which was awarded an Award of Merit at the Temple Show, and has been favourably commented upon in the columns of the gardening Press. In consequence of this, the nursery has been inundated with orders for, and inquiries about, this Daphne, with the result that all the available stock has been disposed of. It may be mentioned here that Mr. Redmond grows it in peat, leaf-mould, and sand, with some grit, and that he keeps it root-bound, and in a position facing almost due north-west. A number of other Daphnes are also well-grown here, among them being D. arbuscula, a name which I cannot trace, and a plant probably new to cultivation.

One of the specialities of the Craven Nursery is the collection of Saxifrages, and one cannot fail to be delighted with the wide range of these, particularly of the Euaizoon or encrusted section, one of great beauty, and one which thrives well on the limestone formation. Mr. Reginald Farrer, the proprietor, is much interested in these, and many of the forms were collected by him in their native habitats. Some notes of the Saxifrages in the frames, taken as they came, are too numerous to be detailed; but perhaps I may mention a few among them. Some very fine forms of S. Burseriana are grown, in addition to the usual form, and S. B. major and grandiflora, and are named "Glory, 1 and 2." Another fine variety of S. Burseriana is called speciosa, and all three are superior forms of a most valuable early Saxifrage.

Of S. cochlearis the two forms, major and minor, deserve mention, as most people are only aware of the one. That named minor is a great beauty. A pink one, called S. Stribrnyi, is worth securing, and was new to me; while S. Aizoon rosea, not absolutely confined to this nursery, is worth noting, with Aizoon lutea, and such others as cuneata, Prostii, aretioides primulina (now scarce), Guthriciana variegata, Elizabethæ, Boydii, Boydii alba, Fosteri (the true form, the true ambigua, scardica, lilacina, Guildford seedling, australis, Frederici-Augusti, the form of porophylla called thessalica, and a host of others, including a hybrid raised here and called cravenensis, which is between S. hypnoides and S. Macnabiana.

Androsaces are well represented, among those noticed in passing through being A. Chumbyi, A. helvetica, A. pyrenaica, A. vitaliana, A. foliosa, A. strigillosa, A. lanuginosa, A. sarmentosa, and others. The Dianthi, also, are numerous, and I noted D. Simsii, D. frigidus, D. gelidus, D. Sternbergii, D. pruinosus (seedlings), D. cinnabarinus, D. superbus, D. superbus albus, D. alpinus, in several forms, D. aridus, D. neglectus, and a large number of others.

Primula species are also among the largest sections. P. farinosa grows in thousands on the mountainside close by, and some selected forms are grown, including farinosa alba; while among the many in the nursery one noted the names of P. Cottiæ, P. pedemontana, P. decorum, P. suaveolens, P. calycina, P. viscosa, P. Sturmiana, P. intermedia, P. jurabella, P. Wulfeniana, P. Reidi, and many more.

Among Campanulas I was delighted to see C. pulloides raised by Mr. T. H. Archer-Hind in such quantities, both in pots and in the rock garden. Its allied plants, such as C. G. F. Wilson and pseudo-Raineri, with the parents, C. pulla and C. turbinata, were also in large numbers, together with C. Allioni, C. Stansfieldi (another new hybrid), the true C. alpina (not the form of rotundifolia often known by that name, but the alpina of Linnæus), C. Scheuzeri, C. Scheuzeri alba, C. Zoysii, C. tyrolensis, C. petræa, C. collina, the form of rotundifolia called macrorhiza, C. Portenschlagiana major, C. garganica, C. hirsuta, C. turbinata, C. turbinata pallida, and, in fact, an almost complete set of dwarf Campanulas in cultivation.

Among other plants noted were Silene acaulis aurea, with pretty golden-coloured foliage; Gypsophila alpina rosea, a charming Alpine of trailing habit; the true Veronica Allioni; different forms of V. saxatilis, including alba; the new Silene pulchra, resembling Schafta, but with its petals of a different form; Ranunculus glacialis, R. parnassifolius, and R. rutæfolius, a plant not so often seen now, but a good Alpine.

Ramondias, in the several species and varieties now procurable, Haberlea rhodopensis and Jankæa Heldreichi are also grown, with several Oxytropises, including the purple O. montana, the pleasing purple Astragalus Vandesii; such dwarf Irises as I. melitta, I. lacustris, I. tomiophylla or tectorum, I. arenaria, and others; Erodiums cheilanthum and E. Sibthorpianum; Sedum corsicum and S. brevifolium var. Pottsii; a good stock of Mertensia maritima, doing well away from the sea and in bloom; M. primuloides; the quaint little Astrantia minor, now seldom seen in nurseries; the dwarf Doronicum Orphanidesii, apparently a better plant than D. Stiatellæ, which eventually becomes tall in our gardens; Geums, including G. reptans; a range of varieties of Geranium lancastriense, collected on Walney Isle, the original habitat of this crane's bill; with Sedums and Sempervivums, and many other plants in great numbers, and almost invariably looking in the best of health.

The rock garden is an admirably-constructed one of the native stone, which lends itself to such work. It combines picturesque effect with the provision of suitable pockets for the plants, and small rockwork pools are also provided for aquatics and semi-aquatics.

These notes have already run to greater length than I had intended, so that I can only refer to a few of the plants. Here were Helianthemums Jubilee and venustum or amabile fl. pl., the best of the double Sun Roses; a late purple Aubrietia called Craven Gem; Geranium Lowei, or anemonefolium; Calceolarias polyrhiza and plantaginea; Antirrhinum sempervivens; Mimulus Burnetti, with M. Brilliant and others; Castelleia minata (hardy here); Jankæa Heldreichi, which flowers here; Erodium pelargoniflorum; Dianthi in variety, and many other plants of herbaceous, suffruticose, or shrubby habit. The whole nursery is very interesting, and not the least pleasing feature is the cleanliness and order which prevails, and which is highly creditable to Mr. Redmond and his staff. *S. Arnott.*

CARNATION RAISING AT "THE WARREN," HAYES.

We may safely aver that no other amateur in this country has pursued the science and art of improving the Carnation and Picotee with so much success as Martin R. Smith, Esq., of Hayes, Kent, President of the National Carnation and Picotee Society. Nor has any trader or amateur distributed so many beautiful additions to these ever-favourite flowers. The raising of new varieties from seed is followed by Mr. Smith and his gardener, Mr. Blick, in no haphazard fashion, for every cross is carried out with definite aims; it may be to give an increase of size to the blooms of a variety; to improve or alter the markings, as in Picotee and Flake Carnations; to modify the number, size, and form of the petals; to raise flowers having the purest of ground colours—viz., white and yellow in Picotees; to improve the habit of growth, character of "grass," or strength of flower stalk in Carnations and Picotees of all sections, so that the flower can be looked at in the face. Every cross made is carefully recorded in a book, on reference to which every required particular about the parent plants may be readily obtained.

Mr. Smith is not easily satisfied in any of these points, and out of the many thousands of seedlings raised annually at "The Warren" by his gardener but few come up to his ideas of a good flower and are retained; even some of those which do so the first year of flowering, on further trial in the second or third year if found unsatisfactory are destroyed. Therefore, no seedling that is not a distinct advance in all points stands a chance of being perpetuated. On the occasion of a recent visit we were shown a field (!) of Carnations and Pico-

tees, consisting of seedlings of all the various sections, numbering 20,000 plants, a wondrous mass of bloom. These were flowering for the first time, from seed sown in warmth in 1905, and planted out in the field from the nurse beds in May and June the same year, the area filled by them being 1¼ acres. In another part of the field there were to be seen 17,000 plants of the present year's raising; therefore, about one acre in extent—nice stocky well-branched plants and standing four rows in a bed at 15 inches apart, with broad alleys between the beds. The land is a hungry, gravelly loam, overlying beds of gravel and standing in need of heavy manuring, whatever the crop may be that is raised on it. As a matter of fact, when it is dug in preparation for the Carnations a layer of cowdung, just as it comes from the sheds, is put on it out of reach of the roots of young plants, but which they will reach about the time it has begun to decay, so that, although the manuring is heavy, no ill results follow, and this mass of moisture-retaining material keeps the plants in vigorous health in the driest and warmest season. The vigour of the flowering plants was very remarkable, and the more so this present year of drought and heat. Vegetable crops in other portions of the same field, presumably under the same kind of treatment, showed good effects, likewise, of the cowdung. The work of selecting blooms from among this immense number of seedlings, all under numbers, is exceedingly onerous and incessant during the months of July and August, demanding an intimate knowledge of existing standard varieties. All selected seedlings are layered in some quantity, some of the layers being retained in pots for testing under glass; others, for out-of-door trials, are planted out in beds in the autumn. It is not every seedling that behaves well under glass or in the open, and this point has to be ascertained by actual experiment.

The Houses.

There are six large, span-roofed houses set apart for flowering the Carnations and Picotees, one of them being the flowering house for the artificially fertilised plants. In this one there were remarked only withered flowers and brown seed capsules, the work of pollination having been finished a week or two previously. Some of the plants were furnished with two, three, and four cardboard labels, on which the names of the varieties that furnished the pollen for the flowers were inscribed, one corner of the label being cut off so as to indicate the fact of pollination having been effected, this stage being indicated within twenty-four hours by the collapse of the flower. There must have been several thousands of these seed bearers awaiting the ripening stage, and the other houses were crammed with the flowering plants.

Carnation and Picotee Beds.

These are arranged in a triple line in a horse-shoe form at one corner of a very extensive lawn, slightly screened from the windows of the mansion, the beds being parallelograms in every case, measuring 3 feet square, and holding from six to nine plants. All the plants were growing with great vigour, and possessed abundance of strong shoots and leaves, and were quite free from any appearance of fungus disease. Noteeable blooms were of the following varieties: Maud Sullivan, a light rose-coloured self of moderate fullness; Floradora, old rose in tint, with a smooth edged petal; Lady Waterlow, cerise red in tint, with a smooth cupped petal and a good doer; Mirabelle, of very bright scarlet, fine out of doors (not exactly new); Grand Vizier, crimson-maroon, good form, and tint of great richness; Mrs. Leo Hunter, F.C., excellent indoors and outside, has extra strong flower stalks; Hesperus, yellow ground F., purple edge, tipped with crimson; Juno, yellow ground F.C., one of the best; Lady Linlithgow, colour old rose-pink, full, petal cupped; Mrs. W. Heriot, yellow ground Picotee, rose edged, one of the best of Mr. Smith's seedlings; Lady Audrey, F.C., yellow, excellent out of doors; Lady Hermione, a rose-pink self Carnation, a very pleasing flower of fine form; Cardinal, a brilliant scarlet self. Cavalier, a yellow ground fancy, has massive, large purple-maroon markings and edges; Merlin, a fancy edged and barred with purple, on a yellowish ground tint; Thais, F.C., with a primrose-yellow ground and slight markings of a crimson colour; Douce Davie, a yellow ground fancy; Sir Galahad, a very fine white self, habit neat; Darkie, C., self, a good upstanding bloom of a crimson colour, petals smooth and regular; Daffodil, yellow self, rather smaller than Cecilia, very nice; Rony Buchanan, yellow ground F. Carnation, markings purplish rose, a smooth cupped petal, and calyx firm and not liable to split. Hildegarde is one of the finest white Carnations, capital for the flower border, with flower stalks of moderate height only, and strong growth, also of moderate height. Agnes Sorel, crimson-maroon self, is good both indoors and outside. The variety King Solomon, a yellow ground fancy, which received an award of merit in 1904 from the R.H.S., was noted in several fine examples. Westward Ho, a yellow ground F., thickly barred with rose colour; Murillo, yellow ground F., crimson markings, are both good varieties.

Of yellow-ground Picotees Ace of Trumps scarlet edge; Annabelle, purple edged, and Lady Bird, yellow ground scarlet edge, are desirable varieties. Of new seedlings of Picotees mention may be made of Judith, Celito, each crimson edged; Nancy Lee, crimson edged, deep yellow ground; Sunbeam, Picotee, deep yellow, with a wire edge, a lovely flower and a circular petal; Ashantee, crimson self Carnation; Nautch Girl, a good form of a yellow-ground Picotee; Amy Charles, also of the same class and Asphodel, a Picotee with the true wire edge.

If the Carnations and Picotees make the most important portion of Mr. Smith's garden, other matters are not neglected. The vineries, fine, large, old-fashioned lean-to houses, with 20 feet long rafters and of great height, are furnished with vigorous, healthy Vines, on which heavy bunches of fruit were hanging in various stages of development, and without a single shanked berry, or the sign of the dreaded "spot" disease. Varieties noted were: Appley Towers, Lady Hutt, both of which give great satisfaction; Black Hamburgh, Muscat of Alexandria, fine, large bunches; and Gros Colmar. A change to the usual mode of growing Figs in vineries was noted, the trees, about 10 feet in height, being planted in the front of the vinery, the spurs on the Vines being removed to that height. These Fig trees bear excellent fruit abundantly. Heavy crops of Melons are grown in narrow span-pits, an alteration from the usual course being to plant a larger number of Melon plants, and take only two to three fruits from each. By this means fine large fruits are obtained, and there is no diminution in the number grown. In regard to Apples, Pears, Plums, Nectarines, and Peaches, the climate and soil being what they are, entire reliance is placed on trees grown in pots, from which excellent crops are obtained under glass and in wired enclosures in the open air. A growing attraction of the gardens is a large rockery that has been formed, and on which a good selection of choice Alpine and rock plants are making good progress. In the vicinity of the rockery an extensive collection of abnormal forms of hardy Ferns has been established, which will be added to as occasion arises.

VEGETABLES.

POTATO TRIALS AT MARKS TEY.

An exhibition and inspection of trials of early Potatos grown at Marks Tey, took place on Wednesday, August 1. The trials were organised by Messrs. Dobbie & Co., in conjunction with Mr Thomas A. Scarlett, of Edinburgh.

The two firms jointly offered £55 in cash prizes, as well as some medals, and there were over 400 entries. It is the first time on record that an early Potato show has been held, and the success must be gratifying to the promoters. The exhibits came from all districts of the United Kingdom and Ireland, and some from the Isle of Man.

The judges were Mr. Edwin Beckett, of Elstree, and Mr. Charles Foster, chief of the Horticultural Department of University College, Reading.

The show was held in magnificent weather. The inspection of seed trials was very interesting (a detailed table of which is given below), and was good testimony to the superiority of farmyard manure over artificial manures.

The exhibits were displayed in a spacious marquee, and, considering the exceptionally dry season, which is most unfavonrable to an early show, were of such excellence as to exceed even the most sanguine hopes. There were 411 entries and 190 exhibitors.

The winner of the gold medal, for the best ratio of increase from the "Midlothian Early" Potato, obtained a yield of no fewer than 80¼ lbs. from 1 lb. of seed Potatos. The winner of the silver medal made a good second with a yield of 72 lbs. from the same quantity of seed.

It was found to be impossible to raise the trial rows on the show day, so Mr. Alexander Dean, Kingston-on-Thames, visited Marks Tey on Friday, the 27th ult., and superintended the raising and weighing of the varieties on trial.

On the 12th April, 120 sets of each variety (Scotch seed) were planted, 60 sets in ground manured with farmyard manure at the rate of about 30 tons per acre, and 60 sets in land manured with a good artificial manure at the rate of 8 cwt. per acre. All other conditions were equal.

Subjoined is the result.

Earlies.		Manured with Farmyard Manure. 60 sets.	Artificial Manure. 60 sets.
White Rounds—	Epicure	86lb.	62
,,	Early Puritan	84	60
,,	Eureka	82	54
,,	Webber's Early	76	47
,,	Alpha	72	52
,,	New Klondyke	72	50
,,	Dalmeny Early	70	50
,,	Milecross Early	68	48
,,	Ensign Baygley	66	52
,,	Harbinger	64	42
Coloured Rounds—	Noroton Beauty	80	64
,,	Eightyfold	64	48
White Kidneys—	Midlothian Early	80	64
,,	Sharpe's Express	76	56
,,	Sir John Llewelyn	76	56
,,	Sharpe's Victor	74	50
,,	Duke of York	74	44
,,	Recorder	64	44
,,	Crampton	64	40
,,	Myatt's Ashleaf	60	48
,,	May Queen	54	36
Coloured Kidneys—	Beauty of Hebron	64	50
,,	Rouge Royal	62	48
2nd Earlies, W.K.—	Russett Queen	76	64
,, W.K.—	Southern Queen	76	60

—Extracts from *Essex Telegraph*.

FOREIGN CORRESPONDENCE.

RUBUS LUCRETIA.

In the issue of the *Gardeners' Chronicle* for July 14, p. 25, an illustrated reference is made to Rubus Lucretia, "obtained from Holland some few years since, but without any history." Is not this the familiar Lucretia Dewberry of American nurserymen? If so it is a form of Rubus villosus Ait. (formerly called R. canadensis) to which Prof. Bailey has added the varietal designation of raribaccus. It is a native of West Virginia, with a vigorous, thorny procumbent habit. Fruit-growers in the Northern States usually set the plants 6 × 6 feet. At the beginning of winter they are well mulched with

manure. In spring five or six of the strongest shoots are tied up to a stake in each hill, the rest being cut off. In the fall they are allowed to trail, as the canes are killed in the winter if exposed. In some places they are trained to wires like Grape vines. The Dewberry is a useful commercial fruit, ripening about two weeks before Blackberries. It should prove very desirable in Great Britain, as our Rubus fruits seem to succeed well with you. Mayes is another variety, from Texas, still earlier than Lucretia, but not yet thoroughly tested in the North. My impression is that it is a little less hardy here. *Emily Taplin Royle, Maywood, New Jersey.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence Bart., Burford, Surrey.

Cypripediums.—The majority of the dwarf-growing species as *C. niveum*, *C. concolor*, *C. bellatulum*, and *C. Godefroyæ*, also many of their hybrids, have passed the flowering stage, and some of them will need repotting; but this operation should not be done oftener than is absolutely necessary, because the roots are so very brittle in nature that some of them are sure to be injured during the process, and injury to the roots is more harmful to these plants than to others of the same genus. The pot in which a well-established plant is growing should be broken around the top, and the pieces carefully removed down to the drainage, leaving this untouched if it is permeated with living roots. Place the whole mass into a larger pot, and fill up to the level of the old drainage with pieces of broken brick or crocks. Make the compost which is put over this moderately firm, and for the species let the compost consist of tough, fibrous loam, freely intermixed with small crocks and some coarse silver sand. The hybrids require a little peat in addition to the above materials. When the operation is completed, prick in a few heads of living sphagnum-moss over the surface. The level of the compost should be left just below the rim. Keep the roots well supplied with water at all times, especially when the plants are in full growth. After repeated trials, I find that these plants succeed best if suspended in a light position near the roof of the Cattleya house, where air can circulate freely around them, but where they will not be subjected to strong, direct sunshine.

Gomesa laxiflora.—This charming "botanical" species is now in flower. Each of its arching flower spikes, of which there are about 50, produces between 30 and 40 flowers, the sepals and petals being of a yellowish shade, with a white lip. It is a very floriferous species, easy to cultivate, and lasts a long time in bloom. The pseudo-bulbs are produced one after another in an upright direction, and in course of time the upper part of the plant gets the better of the lower, and lives away on its own account; but under artificial cultivation, if left undisturbed, the top growths become ultimately weaker, and do not bloom satisfactorily. When—or before—deterioration commences, either at the base of the stems or at the top, turn the plant out of the pot and cut the stems off up to the healthy portion, taking care to leave the piece of footstalk below the pseudo-bulbs as long as possible, so that this may be inserted into the new compost with the pseudo-bulb resting on the surface. The pot or pan should be made about half full of drainage. Fill up the pot with a compost of peat and sphagnum-moss, and, getting some neat stakes, begin in the centre and tie the strongest pieces there, and so on until the pot is full. Stand the specimen in a light position in a cool part of the intermediate house, and whilst growth is being made syringe it over lightly twice or thrice each day.

Grobya galatea, also now in bloom, is another species highly appreciatad. The flowers are densely borne on short semi-pendulous spikes, arising from the base of the pseudo-bulbs, and rest just over the rim of the pot. The plant grows freely in a cool part of the intermediate house; it requires very careful watering at all times, and the compost should never be made very wet. While the plant is at rest keep the soil rather on the dry side.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Freesias.—These Cape bulbs can hardly be over-rated where choice, fragrant flowers are appreciated. The Cape-grown bulbs are now to hand, and if potted forthwith may be had in flower from Christmas onwards, and just at the time when Chrysanthemums are on the wane the Freesias will be of great value for dinner-table and vase decoration. The bulbs should be potted in a compost of good, fibrous loam, well-rotted manure from a spent hot-bed, charcoal siftings, and a free addition of sand. If the compost is in a suitable condition of moisture when potting, one good soaking of water will suffice until the young growths appear. Many failures in growing Freesias are brought about by the too frequent application of water to the bulbs before they have commenced to grow, and many of the bulbs decay in consequence. Copious supplies may be given when the pots have become filled with roots, and then the application of liquid manure will be beneficial. The pots should be stood on a well-drained base of coal ashes, in a cold frame, and, until growth has commenced, should be shaded from the drying influences of the sun, admitting air and light to them gradually. Avoid having the atmosphere too hot at any time. A temperature of from 50° to 60° will be found sufficient for their requirements. Under this treatment the Freesias will grow strongly. They will need neat little stakes, such as may be obtained from the prunings of Privet, after being dried on the top of the boiler. Home-grown bulbs should be potted up at intervals for a succession. Pots 5 inches or 6 inches in diameter are most useful for Freesias, and about one dozen bulbs may be placed in each.

Poinsettias.—Plants which are making vigorous growth, and are already furnished with plenty of roots, should be afforded more ventilation, and the shading may be dispensed with, except for a short time during the hottest part of the day. Encourage growth by syringing the plants freely each morning and afternoon, leaving a small amount of ventilation open throughout the night. Any late-rooted plants of Poinsettias not yet finally potted should receive early attention. Success will be attained by securing firm, short-jointed, and thoroughly-ripened wood from which alone large bright scarlet bracts, of good form and size, may be expected, contrasting strongly with the features of every other plant with which it can be associated.

Schizanthus retusus.—Seeds of this plant may now be sown in pans or boxes, and later sowings made in the middle of September, from which a profusion of flowers may be had in the early spring months. A greenhouse pot is the best place to winter the plants after they have been potted into 6-inch pots, putting seven or nine plants in each pot. In the cut state the flowers will be found useful for filling glasses. The soil for Schizanthus should be of a rich and light nature.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Vines.—Plants that are in need of repotting should be moved into their final pots as soon as possible. Keep those that have already been repotted in a somewhat close atmosphere, and water them with extra care till the roots have taken hold of the new compost. Spray them overhead at closing time, but do not allow any water to remain in the axils of the leaves. The hotbed should be kept for successional plants and others at a temperature of from 80° to 85°. If sufficient stock has not been secured, more suckers should be at once put into 7-inch pots, which should be well drained, using a compost of good fibrous loam, charcoal, sand, and bone-meal, the ingredients being in a moist condition at the time of using in order that no water need be afforded. Plunge the pots into a hotbed until the plants have formed new roots. Plants that are required for fruiting early next season should be allowed more space and somewhat cooler conditions.

Apple and Pear Trees having their roots confined to pots should be given abundance of water, carefully examining each plant two or three times each day. If the pots can be partially plunged, watering will not be needed so often. At this date the fruits will develop quickly if the trees can be put outside in a position sheltered from winds. Pinch the shoots whenever this is necessary, so that the formation of fruit-buds may be encouraged.

Cherry Trees growing in permanent borders will have been cleared of their fruit, therefore the ventilators may be left wide open by day and night. Continue to syringe the foliage every day, and give attention to the watering of the borders so that the fruit-bearing spurs for another season may be strengthened. Afford abundance of air to late varieties growing in pots; syringe the trees daily, and afford water to the roots whenever necessary. When the fruits show signs of ripening, syringing must be discontinued. All early varieties that have finished fruiting should be removed to a position out of doors, plunging the pots in ashes or soil.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Capsicums and Chilies growing in pots in frames should be watered liberally with liquid manure from time to time. Admit plenty of air at all times during the present month, after which the plants may be removed into a greenhouse for the fruits to ripen.

Spinach.—Although it is rather early to sow Spinach for obtaining plants to stand through the winter, it is, nevertheless, an excellent plan to sow a batch well in advance of the main crop to provide for emergencies. There should be plenty of available space in large gardens from now onwards, owing to the crops of Peas, Beans, Potatos, etc., passing over. Thoroughly break up the ground before sowing the seeds, selecting an open space in the garden, for this crop usually succeeds better in such a position than on borders, where the plants become more tender and are consequently more readily injured by changes in the weather. When sowing the seed it is a good plan to sow soot broadcast, using soot that has been stored for some time. This has the effect of helping to prevent attacks from insects that are sometimes troublesome to the root stems.

Celeriac are most useful for planting at the present time rather closely together, as they form an excellent catch crop. There is not a great variety to choose from, and the old Hardy Green sort still holds its own.

Storing Onions.—The dry and hot weather is in many instances prematurely ripening this crop. More often than not Onions are left too long on the growing quarters before being pulled. An Onion with the neck dying down is far more likely to keep if pulled at once than if left longer, when an effort might be made within the bulb to grow again. This is the point where bad keeping commences, and if after this the bulbs are put into a close store or room not sufficiently ventilated, the failure is completed. It is without doubt best to pull the bulbs up just when the necks are limp, and dry them off in the sun, or if growing in a very late locality, they may be given the advantage of a stage in a frame on the fruit houses, where they will be free from heavy night dews or rains. Well-ripened Onions will take no harm from frosts after being stored, providing they have been well ripened and have plenty of air. A shed open at the side is a most suitable place for storage. Large specimen bulbs for exhibition purposes require special care. They should be raised with a fork, otherwise they are apt to split at the base.

Main Crop of Celery.—This crop will require regular attention in the way of having the side growths trimmed off, and in earthing-up the plants from time to time. Celery requires much moisture and feeding, but unless very large heads are wanted the plants should get sufficient from the manure they were planted in. It is much better at this season to partially earth-up the plants at two or several operations than to attempt to do the whole at once, when the centre of the plants would be liable to become burned, and have little chance of growing straight and becoming solid. Sowings of soot and lime are excellent to incorporate with the soil used for earthing-up, as they help to destroy injurious pests, such as slugs &c. About this time the latest brood of Celery fly usually makes its appearance, and it will be well to syringe the plants with paraffin emulsion every week.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Aug. 11	Dutch Gard. Soc. meet.
TUESDAY,	Aug. 14	Roy. Hort. Soc. Comm. meet. Exmouth Hort. Sh. (2 days).
WEDNESDAY,	Aug. 15	Taunton Deane Hort. Sh. (2 days) Wilts Hort. Sh. at Salisbury.
THURSDAY,	Aug. 16	Manchester & North of England Orchid Soc. meet. Merthyr Fl. Sh ; U-k Fl. Sh.
SATURDAY,	Aug. 18	Sheffield Hort. Sh. German Gardeners' Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—62·5°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, August* 8 (6 P.M.): Max. 82°, Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, August* 9 (10, A.M.): Bar., 30·1, Temp., 70°; *Weather*—Fine.

PROVINCES.—*Wednesday, August* 8 (6 P.M.): Max. 77° Guildford, Min. 54 N.E. Scotland.

SALES.

FRIDAY—

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

The Hybridisation Conference.

In the present issue we are enabled to publish a summary account of the proceedings of the Hybridisation Conference, from the time that we went to press last week, to its conclusion on Friday, the 3rd inst. If the papers read in the first half of the Conference were, appropriately enough, of an academic character, those in the latter portion of the meeting were distinctly of practical importance. The general tendency of the "practical" man is to enquire "What is the use of all this? How does it, or how can it, help me in my daily work?" This is quite natural and easily intelligible, but the more completely the practitioner is enabled to grasp the significance of the somewhat recondite matters brought forward at this Conference the more clearly will he appreciate the exceeding value of these experiments and these researches to his practical work in the future, if not in the immediate present. M. Noel Bernard's paper on the relation of certain fungi to the growth of Orchids is a case in point. The presence of fungal threads on the roots of certain seedling trees has long been noted, but at first no one dreamed that it was possible that such association could be anything but mischievous. We know better now, and see that the fungus supplies to the seedling material which the seedling could not obtain for itself. M. Bernard now teaches us the same lesson with regard to Orchids. We commend his paper to all those engaged in the risky process of raising Orchid seedlings. If we refer to the paper of Sir Daniel Morris we shall see how matters that might be thought of purely botanical interest are fraught with the most important practical consequences. It was a mere botanical curiosity when it was discovered that the Sugar Cane occasionally produced seedlings, but now from that little germ has arisen the power of increasing the output of sugar and of enhancing the power of resistance against disease. Mr. Biffen's paper on the breeding of Wheat is even more remarkable, and the results obtained are of the highest possible potential value.

It is of no use wringing our hands and lamenting that our cousins across the Atlantic, and our more distant relatives across the Channel, are sharper than we in perceiving the significance of all these matters, and are already turning them to advantage, as was revealed at the Conference. What we have to do is to follow in the same track. We have as much brain-power in the old country as they have in the new or in Germany. Our leaders are every bit as intelligent and resourceful, but the masses, and even our legislators, are deplorably inappreciative and careless. Such meetings as have been held this week must have their influence in inducing us to comply with the saying of the Prince of Wales on his return from a Colonial trip—"Wake up, England!" In fact, the Conference has been a great success, and the thanks and congratulations of the community are due to the R.H.S. for their efforts in this matter. We have always thought that the various conferences held at Chiswick, and even at South Kensington, were of much more importance than the endless series of exhibitions, the chief value of which is commercial. Commercial interests are of very high importance, but they can look after themselves. The kind of information elicited from these conferences could not be extracted by commercial methods alone: they require the scientific method and the trained intelligence, in addition to the business instinct. We have already congratulated the society in this matter, but we should not be doing our duty if we failed to recognise the ability, the tact, resource, and courtesy which characterised Mr. Bateson in the prolonged and arduous duties imposed upon him as chairman.

In our last issue we were enabled to give portraits of some of the leading members of the Conference and a view of Burford, where the members were hospitably entertained by Sir Trevor and Lady Lawrence. This week we give some illustrations of one of the gardens at Gunnersbury, where Mr. Leopold de Rothschild offered luncheon to the members as they passed on their way from the Natural History Museum to Kew, and hope in our next issue to publish further illustrations from the other garden at Gunnersbury, that under the care of Mr. George Reynolds. What impression our foreign guests could have obtained from their hasty visit to these establishments we can hardly conceive. At any rate, we meant well.

OUR SUPPLEMENTARY ILLUSTRATION.—Among the eight new varieties of Sweet Peas which received recognition by the National Sweet Pea Society at the Exhibition on July 5th, no fewer than half were presented by Mr. C. W. BREADMORE, Winchester, including the three sketched by Mr. WORTHINGTON G. SMITH, and reproduced in our Supplementary Illustration. Audrey Crier was considered by a committee of the National Society the finest new variety of the year, and accordingly it received the Society's Silver Medal, offered for the flower of highest merit among new kinds. A full description of each will be found on p. 36, to which we must refer our readers. Etta Dyke will be especially welcomed, as it gives us a white flower with the form and grace of the Countess Spencer type. On p. 84 we gave an illustration of another excellent new variety, Rosy Morn. This was shown by Messrs. CANNELL & SONS before the Floral Committee of the Royal Horticultural Society at the meeting held on July 17th, when it was granted an Award of Merit. Probably no flower has a greater tendency to sport than has the Sweet Pea, and doubtless it is owing to this fact that we have become possessed in so short a time of such diversity of form and colour in this now popular flower; but we must not lose sight of the fact that all sports are not necessarily advances, therefore to ensure a variety flowering true it should be thoroughly fixed. We mention this because when inspecting a trial of these flowers recently many of the rows of newer varieties showed so many sports that it was difficult to recognise the true variety. In independent trials, for instance, the variety Audrey Crier was found to be extremely variable.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday next, August 14th, in the Society's Hall, Vincent Square. A lecture on "Artizans' Gardens in Large Towns" will be given by Mr. F. COCK at three o'clock.

BOTANICAL MAGAZINE.—The August number contains coloured figures and descriptions of the following plants:—

RHODOSTACHYS PITCAIRNIIFOLIA (*Bentham*), tab. 8,087.—A spiny-leaved Bromeliad of tufted habit whose central head of blue flowers is encircled by a ring of scarlet floral leaves. It is a native of Chile, and flowered at Tredarvah, Cornwall, last November, having previously flowered at Kew. Mr. DORRIEN SMITH notes that the plants flower annually in the open air at Tresco. The plant is here described by Mr. C. H. WRIGHT.

BULBOPHYLLUM ERICSSONI (*Kränzlin*), tab. 8,083. —See *Gardeners' Chronicle* 1897, i., 61, fig. 16.

BORONIA FASTIGIATA (*Bartling*), tab. 8,089.—A pretty greenhouse shrub from West Australia, with small, ovate, dotted leaves and clusters of small pink flowers. The four ovaries are free, but the styles are united for the greater part of their length. Mr. SPRAGUE contributes the description.

CODONOPSIS TANGSHEN (*Oliver*), tab. 8,090.—A curious climbing Campanulaceous plant, with stalked, ovate, lanceolate dentate leaves and large yellowish bell-shaped flowers on long stalks. The root is used for medicinal purposes by the Chinese, under the name of Tang Shen. It was introduced to the Veitchian nurseries by Mr. E. H. WILSON. It is described by Mr. SKAN, Kew.

HEDYSARUM MULTIJUGUM VAR. APICULATA, tab. 8,091.—Mr. SPRAGUE here describes a form differing from the type in the smaller number of its leaves, which are apiculate and glabrous. Its long pinnate leaves and spikes of rosy lilac, pea-shaped flowers render it very attractive. Kew

FLOWERS IN SEASON.—From LADY ACLAND, Killerton, come gorgeous flowers of Mutisia decurrens. Apart from the splendour of the flowers, the Mutisias are remarkable among Composites for their climbing habit and tendril bearing leaves as

well as for the structural conformation of the flowers. A small plant put out at Killerton, Devon, at the foot of a west wall three years ago is now, we are told by the gardener, Mr. Coutts, some 12 feet high, and is at present smothered in flower; just now there are over 200 flowers on it, and it is a gorgeous bit of colour when they are all expanded. This plant, which is a native of the Chilian Andes, was collected by Pearce for Veitch & Sons, of Exeter and Chelsea, and first flowered in 1862. It is a plant that has generally been considered difficult to do, but given the right position it seems to be very little trouble.

From Messrs. Jas. Veitch & Sons, Chelsea, we receive specimens of two stately plants—the one is Senecio Wilsonianus, of Hemsley, described in our columns on September 16, 1905, p. 212, the other is Buddleia variabilis var. magnifica, *Gardeners' Chronicle*, 1905, xxxvii., p. 115, 157. Both are described in the noble "Hortus Veitchii." Senecio Wilsonianus is a stately species with broad, reniform, finely-toothed leaves on long stalks, which are covered with down, while the leaf-blade itself is quite smooth. The yellow flower-heads are very numerous, arranged in tall, erect spike-like racemes 5-6 feet high, resembling those of an Eremurus. It was introduced from Western China by E. H. Wilson. Buddleia variabilis var. magnifica was introduced from Hupeh by Wilson. "It differs from the brilliant Veitchiana which it equals in size of flower-spike in profusion of bloom, in a more constricted thyrsus, and in having flowers of a deeper, richer shade of violet purple."

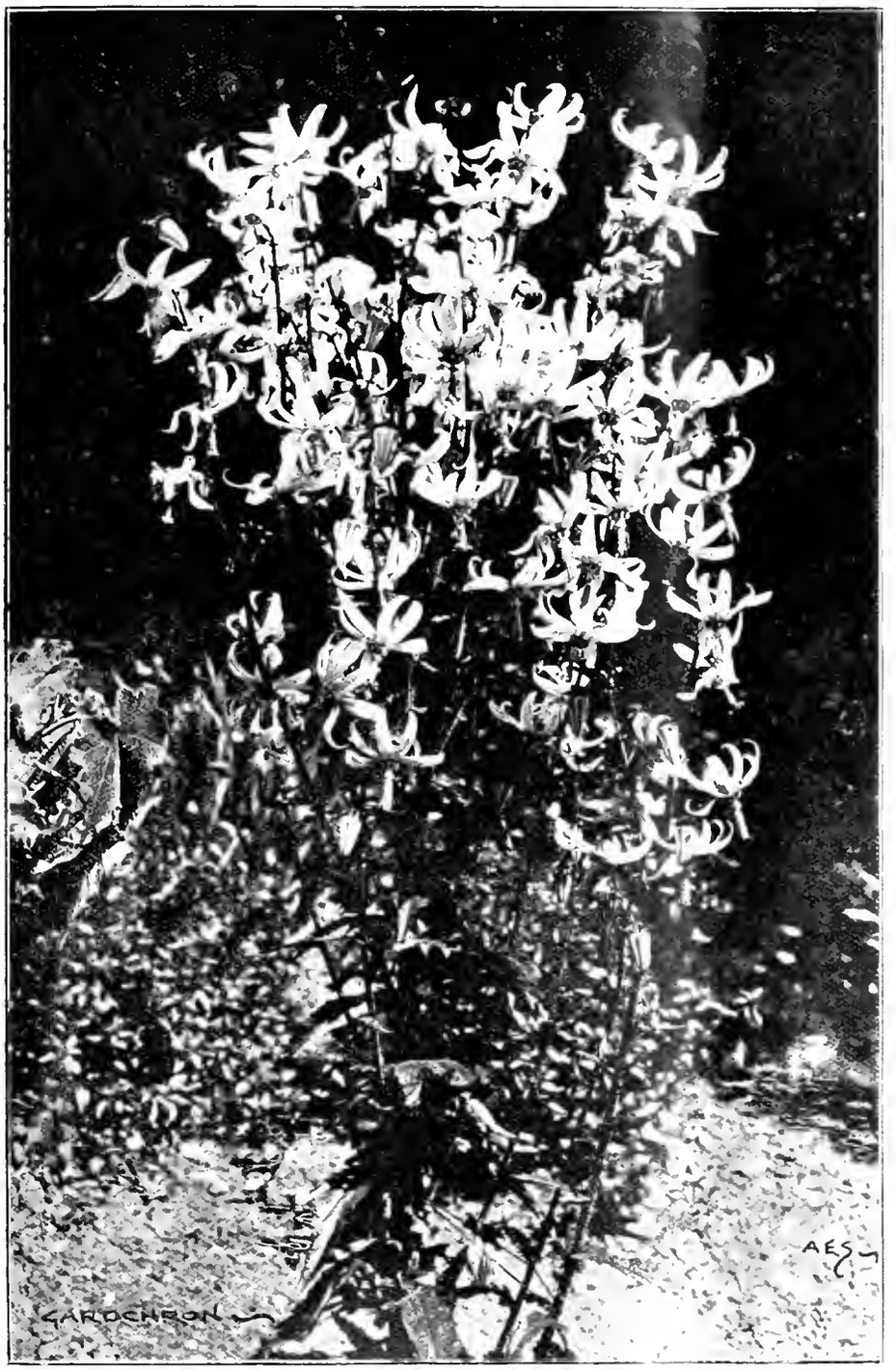


Fig. 43.—Michauxia campanuloides: flowers white.
(For text see page 112.)

Kew Bulletin. The last number of this periodical (No. 5, 1906) contains an interesting and elaborate article on Burmese lacquer, the produce of Melanorhœa usitata, a Burmese tree, and on the manufacture of the lacquer ware. The article is contributed by Sir George Watt, who says, in conclusion, that it is a varnish of great merit and immense possibilities that at present practically takes no part in the arts and industries of Europe and America. Mr. Hemsley describes several of the novelties from Western China, collected for Messrs. James Veitch & Sons by Mr. E. H. Wilson, and leads us to hope that eventually a larger and more general contribution may appear. Some of the descriptions are signed by Mr. Hemsley and Mr. Wilson jointly, whilst the latter author contributes some interesting notes which whet our appetite for more of like nature. Numerous new species are also described by various members of the staff, from tropical Africa, and are also welcome. J. M. H. contributes a note on "Miraculous Fruits" of West Africa, which have the property "of changing the flavour of the most acid substance into a delicious sweetness." The tree in question is Sideroxylon dulcificum, a member of the Sapotaceous family; the fruit of which resembles a small plum with the seed invested in a thin, soft pulp, wherein lies the peculiar sweetening property. Thaumatococcus Danielli, a Scitamineous plant from the Soudan, has similar properties. Picea Brewerana (see *Gard. Chron.*, April 17, 1886, p. 497) is the subject of a note, the Kew plant being, it is believed, the only one alive in Europe. It is one of the flat-leaved spruces with pendulous branches. A note of great interest to Orchidists relates to the collection of drawings made by the late Mr. John Day at Tottenham. They are about 3,000 in number, and specially valuable as comprising many of the types described by Reichenbach, now preserved at Vienna, where, according to the terms of the Professor's will, they will not be available until 1914. An interesting biographical note on Mr. Day is contributed by Mr. Hemsley. Another biographical note of great value is that by Sir Joseph Hooker on his life-long friend and associate the late Mr. Bentham, in connection with the recently published biography by Mr. B. Daydon Jackson. We have only indicated a few of the contents of this particularly interesting number.

Mr. Wythes.—We greatly regret to hear that this eminent and widely known gardener is about to relinquish his position at Syon House, mainly on the score of ill-health. Mr. Wythes will leave Syon at the end of September, and take up his residence in the vicinity of Folkestone.

National Potato Society. We are informed that the annual inspection of the trials of seedlings and novelties now being conducted at Burgoyne's Farm, Impington, near Cambridge (under the supervision of Prof. T. H. Middleton, of the Department of Agriculture, Cambridge University), will take place to-day, August 11, at 2.30. Histon, on the Great Eastern Railway, is the nearest station to the farm. It is hoped that a good number of members will avail themselves of the opportunity to inspect the trials, which are of a very interesting character.

The Azores Islands Lily.—The culture of Lilium longiflorum is advancing in these islands. The plants are reputed to be free from disease, and are remarkably sturdy and vigorous. The *Weekly Florist's Record* says that the bulbs are slow to grow, but that they endure cold storage as well as the ordinary kinds.

Icones Selectæ. The publication of this valuable work is being satisfactorily carried on. Vol. V., fascicle seven, contains the descriptions and plates of Drimys aromatica, Spiraea hexagemmis, Rhipsalis trigona, Atriplex coriacea, and Passerina filiformis. Fascicle eight deals with Eutaxia myrtifolia, Genista Nyassana, Dicliptera Niederleiniana, Vitex Negundo, and Babiana flabellifolia.

DR. KARL BOLLE.—Well known in botanical and literary circles, this gentleman celebrated recently his 60 years jubilee as a medical practitioner, his age at the time being 84 years. He is best known in the horticultural world as a Dendrologist. On his property, the Isle of Scharfenberg, near Tegal, he possesses a valuable, scientifically arranged collection of trees and shrubs, which he is willing to show to anyone interested in these plants on previous application being made to him. About 20 years ago, when the formation of the Berlin Botanical Gardens was being taken into consideration, it was proposed to purchase Scharfenberg on account of the valuable collection there, but ultimately Dahlem was chosen as the site of the new garden.

A NEW BLACKBERRY.—Messrs. ROBERT VEITCH & SON, the Royal Nurseries, Exeter, have sent some fruits of their new Blackberry, Rubus Lucretia, which was figured in a recent issue. The berries are large, juicy, and of good colour and substance, and ripen early (see also p. 108).

GARDEN OUTINGS.—The Royal Horticultural Society did its best to provide entertainment for foreign guests last week, but they were outdone in this particular by the managers of one of the American gatherings lately. Among the entertainments provided was one in which a number of competitors had their hands tied behind them. A number of large Water Melons, cut in halves, was then provided, and the competitors set to devour as much of the juicy fruit as their crippled condition would permit. Judging from the smiles on the faces of the bystanders the onlookers had the best of the fun.

BEECH TREES AND LIGHTNING.—An inquest was held at Hemingfield, near Barnsley, on two miners, who were struck dead by lightning whilst sheltering with others under a large Beech tree in Wombwell Wood, on the morning of July 31. The Coroner, in summing up, said that the sad event raised a rather interesting question. He had for years read that there was no record of a Beech tree being struck by lightning, and he had also read of people in some countries placing Beech trees around their houses for the purpose of protection from lightning. In the course of his experience he had seen and heard of very many trees that had been struck by lightning, and 99 out of every 100 were Oak. He had never heard of a Beech tree having been struck before. He went purposely to look at the tree to make sure that it was a Beech, and he saw no mark of an electric flash in any shape or form. In striking an Oak tree, he had known the lightning send sparks as far as 200 yards, but in this case it never injured the tree. This was a most singular circumstance, for he believed it was an accepted fact that a Beech tree has never been struck by lightning. He should include in his official verdict a note that the men were sheltering under a Beech tree when they met their deaths.

THE LATE DUKE OF RUTLAND.—Horticulture loses one of its most liberal patrons in the recent death of the aged Duke, Master of Belvoir, near Grantham. He maintained the gardens around the Castle well, and was always willing for anyone to go and see them, and allowing visitors to roam about at their pleasure. Spring gardening, as our readers are aware, was one of the principal features at Belvoir. The Duke was a model landlord and employer, always interested in the welfare of those connected with his large estates, and taking especial notice of the cottage gardens and allotments, which are very good in this district. The present gardener, Mr. W. H. DIVERS, has frequently spoken to us of his late master in terms of high appreciation.

Publications Received.—*Mushrooms and how to grow them*, by J. F. Barter (Napier Road, Wembley, Middlesex). *Fungoid Pests of Cultivated Plants*, by Dr. M. C. Cooke (R.H.S., Vincent Square), a valuable reprint, to which we must refer at length when our columns are less crowded.—*Agricultural Returns relating to acreage and produce of Crops and number of Live Stock in Great Britain for 1905* (Wyman & Sons). A very valuable synopsis.—*Plantes Bulbeuses, etc.*, par Raphael de Noter. Paris. (Charles Amat).—*The Book of Market Gardening*, by R. Lewis Castle (John Lane).—*A First Course in Practical Botany*, by G. F. Scott Elliott (Blackie & Son).—*Insect Pests of the Farm and Garden*, by F. Martin Duncan (Swan Sonnenschein).—*Catalogue of the Plants of Kumaon* (Lovell, Reeve & Co.).—*The Yachting World*, June.—*Report of the Botanical and Forestry Department, Hong Kong*, for the year 1905. In the Botanic Gardens the year was free from serious damage by typhoons. Libocedrus macrolepis flowered in the new garden for the first time. In April an expedition was sent by the Government to investigate the botany of the province of Tokien, and brought back much of interest.—*Jamaica Bulletin of Agriculture*. June. Contents: Silkworms from Jamaica, Leather, Coffee, Tea, Island Cotton Seed, and application of Paris Green to cotton.—*Queensland Agricultural Journal*. June. Contents: Manures, Australian tobacco crop, tropical industries, contributions to the Flora of Queensland, F. M. Bailey, &c.—*Agricultural Gazette of New South Wales*. June. Contains papers relating to crops, forestry, and stock.—*Report of the Connecticut Agricultural Station for 1905*. Details the critical studies made by Dr. Clinton of the Peach Scab and other fungoid diseases, of the investigation into vegetable proteids by Dr. Osborne, and much similar work of scientific and economic value undertaken by various members of the staff.—*The Business Man's Magazine*. July. (English Edition).—*Some Facts about the Weather*, by Wm. Marriott, F.R.Met.Soc., Assistant Secretary. A popular meteorological hand-book, telling how climatic variations are recorded, and helping observers to understand indications for themselves.—*Sugar Cane Experiments in the Leeward Islands*. Reports from Antigua and St. Kitts for 1904-5. Part II. Manurial Experiments. Details the results of five years' work, which it is hoped will tend to prevent waste and direct effort into proper channels.—*Scheme of Agricultural Education in connection with the Lancashire Education Committee.*—Dr. H. L. Snape, Director of Education. Useful work is carried on at the County Council Farm, Hutton, near Preston, and instruction is given in all branches of agriculture, in horticulture, and more general subjects. Men and women teachers and pupils are admitted.

FIG. 44.—VIEW IN A DONEGAL GARDEN.
(For text see page 113.)

MICHAUXIA CAMPANULOIDES.

THIS, though rarely met with in gardens, is one of the most beautiful and stately of border biennials, and always evokes admiration when seen in any quantity and at its best. It was introduced into this country in 1789, and was first flowered in a nursery in Kensington in July of 1792, from which specimen, grown in a pot, it was figured in the *Botanical Magazine*, 7, tab. 219. It is a very striking and remarkable plant, and it is a matter of surprise that it is so little grown. The stems are numerous and branching, and the plant, when well-grown, forms a pyramid some 5 feet or 6 feet in height. The blossoms, which bear a certain resemblance

to those of a Passion Flower, are large and consist of eight, long, white reflexed petals, and are borne in quantity on the branching shoots, so that, when in full flower a fine plant attracts the attention from afar as a pyramid of white. The height of 5 feet to 6 feet mentioned above is often exceeded, an altitude of 8 feet or even 10 feet being sometimes attained, but in such cases the side branches are generally few and weak, and the plant does not present the pyramid of bloom that renders it such a conspicuous object in the border. Occasionally plants do not die after flowering, but it is always best to treat it as a biennial and to sow seeds every year. The seed is very small and is best sown in a pan in June, and kept in a frame until the seedlings are up. When the plants are large enough they should be pricked out into a nursery border of rich soil, and remain there until they are transferred in the autumn to the spot where they are to bloom. The seed-pods much resemble those of the Canterbury Bell, and the second flowers come from the axils of the first as in that plant. A sunny border and a warm, well-drained soil are best suited to its requirements. *S. W. Fitzherbert.*

Fig. 45.—"A crowded corner" in a Donegal garden.

VIEWS FROM A DONEGAL GARDEN.

We are indebted to an occasional correspondent, Miss S. M. Wallace, for the pretty views (figs. 44 & 45) taken in Donegal, of which lough a peep is afforded in fig. 44, with the mountains in the background, while in fig 45 is seen a pretty corner of an Irish flower border in springtime. In this latter picture, the clump of Ferns to the left is planted in a rough piece of Bog Oak, which makes a capital background, and Ferns, Grasses, &c., do well in such situations, if care is taken to water them in dry weather, as the pockets do not afford much room for soil.

Two old favourites—London Pride (Saxifraga umbrosa) and Bachelors' Buttons, with a wealth of Ferns, Heuchera, Forget-me-nots, and Tulips, are all growing with a vigour that shows their sunny corner is in keeping with their requirements.

The views of the old shrubbery and lough (fig. 44) afford a glimpse of Irish scenery. The foliage shows to advantage against the distant lake and mountains, while the dark branches of the copper Beech tone well with the tall, slender growths of Abies Nordmanniana, while the richly-coloured blossoms of Rhododendron Blandyanum are shown off by its white-flowering neighbour. The handsome Gunnera scabra completes the group.

Science and Agriculture.—Germany offers no field for dishonest dealers in cake, mineral manure, seed and meals. The farmers recognise the absolute necessity and the pecuniary benefit bestowed upon them by having due knowledge of chemistry and making use of this science to know how to feed their stock judiciously, produce milk, meat, or muscle, how to feed the crops with certain quantities of nitrogen, phosphates, and potash, and to make use of the many Government institutions established for the welfare of the community. (*Consular Report*, "Agriculture in the Rhenish Province.")

THE HAY CROP OF 1906.

ROTHAMSTED EXPERIMENTS.

The beginning of the year found the surface soil in Mid Herts deficient in moisture to the extent, according to the Rothamsted observations, of about 178 tons of water on each acre of land. January and February of 1906 gave an excess of 2¼ inches of rain, compared with the average; this was followed by three months of deficiency—March, April, and May—aggregated 200 tons of water per acre less than the average amount. The first three weeks of June recorded a further deficiency, but on the night of the 28th over 2¼ inches were measured, which brought up June's rainfall to 3·6 inches, being 1¼ inch in excess of the Rothamsted average for the past 50 years.

The mean monthly temperature was below average in February, March, April and June, but slightly excessive in January and May. The season has been saturated with bright sunshine, which is a characteristic of the year, May being the only month that registered a deficiency. The total sunshine for the first six months of 1906 was, according to the Rothamsted record, 103 hours in excess of the usual average

It has been the nights which have been so exceptionally cold and have brought down the mean temperature, and kept the soil abnormally chilled. The dominating characteristic of the year in Mid Herts has been drought, associated with bright sunshine in the day-time, excessive cold at night, and a consequent chilled, almost freezing soil. These conditions, accompanied by lack of rain during the usual growing period of the mixed herbage of grass-land, has resulted in a much less than average crop of Hay. The splendid rain at the end of June assisted the verdure of the grass-fields, but came too late to greatly increase the bulk. The early grasses, such as Foxtail, Sweet Vernal, Brome grass and Quaking grass, none of which produce very bulky produce, ripened quickly, without forming much bottom herbage. The Leguminous plants, especially Lathyrus pratensis (meadow Vetchling), made but little headway until the end of June, Red and White Clovers were not so vigorous as last year, while the Red Sorrel Dock and Buttercups have been particularly prolific. Owing to the continuous bright sunshine and a moderate force of wind there has been no difficulty in obeying the old adage to "make Hay while the sun shines." The thin crop merely had to be cut and left for a day or two as the machine delivered it, then drawn together with a horse-drag, and with one turning was usually ready for carrying without further trouble. In a few cases, however, we hear of too much haste, which has resulted in "firing of the stacks."

Under the foregoing conditions the Rothamsted experimental grass plots, 22 in number, which have this year grown their 51st crop of Hay under the same manurial treatment, have in all cases given a deficient yield compared with the average, ranging from less than one cwt. to 13½ cwt. of Hay per acre below the average product. The crop grown without manure during the whole period of 51 years was 12·2 cwt. per acre, being 9·1 cwt. less than the average produce of Hay for this plot. With superphosphate alone 14·4 cwt. were obtained, a gain of but 2 cwt. over the unmanured, and 8·1 cwt. below average. The effect of phosphate alone, whether applied as superphosphate or basic slag, if applied for several years in succession, causes exhaustion of the soil nitrogen, so that very poor crops of grass are grown. With the addition of ammonia salts to the superphosphate, a yield of 23·4 cwt. of Hay per acre was obtained; this, however, is nearly 11 cwt. per acre less than the average. Adding sulphate of potash to the phosphate and ammonia, the crop was raised to 39 cwt. per acre, which is 26·8 cwt. in excess of the plot receiving no manure, but is

12 cwt. below the average output. The quantity of sorrel dock (Rumex Acetosa) on this plot this year was most remarkable. Three years ago a dressing of 2000 lbs. of ground lime was applied on one-half of this plot, which has had the effect of increasing the crop to 2¼ tons per acre, and of decreasing the proportion of sorrel. On the section receiving lime, there was also a falling off of but 1 cwt. of Hay below the usual average; such is the good effect of lime even under unfavourable climatic influences. It may be mentioned that on one-half of some other plots of the experiments, lime was applied three years ago with more or less beneficial effect. Where there was no appreciable gain was on the plots deficient in potash. With phosphates and potash applied as manure without nitrogen there was obtained 34.4 cwt. of Hay per acre, a crop less than the average by 1.2 cwt. only. This plot of land has received not one ounce of nitrogen in manure during the whole period of 50 years, and yet it has produced nearly three times the amount of crop over that grown without manure. The fact is that potash and phosphates encourage the growth of Clovers and Vetchlings, which, by virtue of the micro-organisms in the nodules on their roots, get the nitrogen required from the atmosphere, where it exists in abundance if the crops can but assimilate it, which the Leguminous plants, even in grass-land, seem to be able to do. Under these conditions the application of lime increased the crop by seven cwt. per acre; this element combines with the nitrogen-residue in the soil, brought about by the nitrogen collecting clovers, and thus forms nutritive plant food. Lime without humus matter to act upon is of but little benefit, as is shown on plot 8 of these experiments, which receives sulphates of soda and magnesia, with superphosphate, but no potash or nitrogen. Here the crop is reduced to 21 cwt. per acre, being 6 cwt. less than the average quantity. The mixed herbage contains a very small proportion of clovers, not more than 4 per cent. of the whole bulk, consequently there is little nitrogen absorption from the atmosphere, and but little nitrogen residue in the soil for the lime to act upon. Hence there was less crop with the addition of lime than without.

The value of nitrate of soda in seasons of drought is strikingly shown in the Rothamsted experiments, and especially on the mixed herbage of grass land where many of the plants send down their roots very deeply into the subsoil. There is an increase of crop even under the influence of nitrate of soda alone, but when this soluble manure is combined with potash and phosphate, the result is much more marked. In the present season 41 cwt. of Hay per acre were obtained, against 30 cwt. for the corresponding plot receiving ammonia salts.

The heaviest crop of Hay produced this season was grown with a full mineral supply and an excessive amount of ammonia-salts—146.2 lbs. of nitrogen per acre. This gave 61.7 cwt. per acre, showing a deficiency compared with the average of less than 1 cwt. of Hay per acre. The produce consisted almost entirely of grasses, and is made up by three or four of the strongest and coarsest species. The quantity of Hay is, therefore, very inferior, and is not to be recommended for cattle feeding.

It may be stated as a general rule, that to keep up the quality of a pasture cut for Hay every year, a manurial dressing of about 10 tons of farmyard dung should be given once in each four years, and in the intermediate years an application of 3½ cwt. superphosphate or 5 cwt. basic slag, with 4 cwt. kainit or 2 cwt. sulphate of potash, and combined with these not more than 1 cwt. of nitrate of soda. If bulk of produce is required rather than quality, then the quantity of nitrate of soda may be increased to 2 cwt. per acre, but should not exceed this amount. *J. J. Willis, Harpenden.*

HOME CORRESPONDENCE.

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

STORM AT GUILDFORD.—Guildford was visited by such a thunderstorm on August 2 as cannot be remembered in the annals of this place. The gardens here suffered great damage. Hailstones as large as marbles cut the leaves, flowers and fruit to atoms. Vegetables were cut flat to the ground. Nothing but destruction is to be seen. Chrysanthemums and Tomatos are stripped of their leaves. Giant Elms and Oaks over 100 years old in the Park are torn and broken about in such a manner that they will never recover. *R. Staward.*

POLYGONUM SPHÆROSTACHYUM.—Without entering fully into the recent correspondence regarding water gardens, perhaps I may be permitted to make a remark upon Polygonum sphærostachyum, referred to by Mr. Mallett and Mr. Horton with conflicting views as to its cultivation or situation. As one who has known this plant for a long time, and one who has seen it under very different conditions, it appears to me that, although difficult to grow in some places, in others it will accommodate itself to widely differing conditions. I have found it to carry on a lingering existence for a few years in a rather boggy and peaty soil, such as has often been recommended for it, and I have also seen it do well in similar conditions. I have known a good plant, on the third terrace of a somewhat dry rockery, which has thriven there for a good many years, and I have had under observation another doing equally well in a peaty soil and on the level, but in a moist position. I have a plant myself in a dry position about nine inches above the ground level, and planted about a year ago. It is doing well. Regarding the layering the side growths, this is desirable, but not absolutely necessary, as I have seen a good many plants in perfect health without this treatment. Certainly if increase is desired this should be done. The names of P. sphærostachyum and macrophyllum are inappropriate enough, but that is no new thing with plant names. *S. Arnott.*

THE NATIONAL POTATO SOCIETY.—From conversation I have had with several strong supporters of the National Potato Society, I gather that great dissatisfaction exists with respect to the arrangements to hold the third annual Potato exhibition so late as the middle of December. I do not know, although at the time the arrangement was made I was a member of the executive committee, but was not able to attend the meeting held at the Agricultural Hall, why the date was fixed so late; certainly it is according to all precedent not only late, but far too late. When members of the trade who have been in the past strong supporters of the exhibitions, intimate that they can no longer support a show held so late in the year, it is evident that both the Society, which is something, and the interest of the Potato, which is far greater, should have greater consideration than them. The exhibitions of the old International Potato committee, the finest and most successful ever held, were always in the early autumn. Then, too, amateur growers were abundant. These had largely been created by the society, but the present shows the amateur element has not been prominent. Where shall we find nowadays an equal to Mr. Hughes, of Wentworth Woodhouse, who was in the old days a veritable prince amongst Potato growers. We want to see such competitors as he and many others were then, but that can never result if the annual exhibition is made a mere appanage of the Smithfield cattle show. I would suggest that the new secretary and the treasurer join in issuing notice of a meeting of all last year's subscribers at once to consider the question as to the date at which the exhibition has been fixed, leaving the majority to determine a matter of unquestioned importance. *A. D.*

THE LATE WILLIAM CHESTER.—No private garden enjoys greater historical distinction than does that of Chatsworth. Apart from the great palace itself, its noble gardens and glorious surroundings, its name will always be associated with the memory of one of the most celebrated gardeners of the 19th century, Sir Joseph Paxton, as it will also with that of his munificent patron and friend the sixth Duke of Devonshire, the creator of this wonderful garden. The late Mr. Chester, whose death was recorded in the last issue of this journal, would have been the last man in the world to have laid claim to any distinction or particular merit of his own. Mr. Chester was one of the most modest and self-effacing men the writer has ever known, and yet he had good reasons to be proud of his career, although a humble one. He had the unbroken and proud record of serving three dukes over the long period of 52 years. He entered the gardens first when his Grace the present Duke came of age, and he often used to recall with pride the magnificence of the celebration of that day. As a young gardener he passed through most of the departments of the gardens until he was placed in charge of the great conservatory, which charge he retained for very many years; in fact, until his faithful and long services were rewarded in 1891 by his appointment as head gardener. As a gardener he was distinguished by the assiduity and industry by which he discharged all his duties. No man ever entered a garden who was more methodical, regular, and even punctilious as regards the discharge of duties devolving upon him than he was. It used to be a standing joke that Chester was never known to be a minute behind his time in the morning all the years he worked at Chatsworth, and I believe this to be quite true. No doubt the pride of his life was his long charge of the great conservatory, the condition of the contents of which did his labours and care great credit. Anyone who has ever seen the magnificent baskets of Achimenes hanging from the roof of the great house, many of the specimens 5 feet through, simply giant balls of lovely colour, or the equally large and well-grown baskets of Maidenhair and other Ferns, can never forget the sight. He had a special love for Ferns, of which he had a good knowledge, as he had also of Cactaceous plants. He also had the credit of first flowering the Renanthera coccinea in this country, growing it on a piece of Birch-pole suspended from the glass on the west side of the house. Mr. Chester's life was unique in the sense that, during his 52 years' of continuous service at Chatsworth, he became associated in practical work with many of the best-known and celebrated gardeners of the last decade. Mr. Paxton (as he was then) was laying the foundation of his future fame as a great builder of glasshouses and a maker of gardens. Amongst others of his contemporaries of those days were Andrew Stewart (the once famous kitchen gardener there—afterwards succeeded by James Taplin—a stormy petrel of that time), Thomas Speed, and Owen Thomas. Fellow workers of his were also John Gibson, of Battersea Park, Geo. Eyles (the predecessor of A. F. Barron, of the R.H.S.), Milner (of landscape fame), Latham (late of the Botanical Gardens, Birmingham), Bennett, of Rangemore, and a host of other well-known gardeners of their day. Mr. Chester's life has been of a singularly even tenor, a bachelor with no particular care, of a genial and cheerful disposition, and a mind full of pleasant and interesting reminiscenses of the past; a man who made a host of friends and never an enemy. He was followed to his grave at Edensor Churchyard on July 31 by a host of sorrowing friends. *O. T.*

STOCK "MONT BLANC."—In one of the public gardens here we have a border some 40 feet in length planted with this Stock, which I believe was sent out by Messrs. Carter & Co., High Holborn, and being at present in their full beauty they speak eloquently both of their worth as decorative plants and as to their value for town gardens. Further, I never remember having seen or noted such a large percentage of "doubles," not more than a dozen singles appearing in 350 plants. The glistening purity, together with the great size of spike and individual bloom of this variety, render it one of the most valuable and beautiful of garden plants. *Walter H. Aggett, Supt. Public Gardens, Bermondsey, S.E.*

BLACKBERRY "ELDORADO."—I am sending you fruit and foliage of the American Blackberry "Eldorado," which I consider the best of the American varieties. It is an early variety, as you will see by the fruit being already ripe. The foliage is bold and distinct, and the spines are comparatively few: it is a good grower, is thoroughly hardy, and has not the great defect of most American brambles, which often die off from no apparent cause. The fruit is from a small plant transplanted in February last. I have also a variety selected from the Moorland Blackberries of Devonshire, which as a bearer will, I think, surpass the "Parsley-leaved" Blackberry, but of course it is much later in ripening than "Eldorado." *George Pyne, Denver Nurseries, Topsham.*

ROYAL HORTICULTURAL SOCIETY.

International Conference on Hybridisation and Cross-Breeding.

In our last issue we published the proceedings of the Hybridisation Conference up to the time of going to press on Wednesday last.

The proceedings were resumed at the Society's Hall, Vincent Square, on the Thursday morning, Mr. W. Bateson, F.R.S., V.M.H., President of the Conference, again presiding.

The Germination of Orchids.

M. Noel Bernard, of the University, Caen, France, read a paper on this subject. He said on the roots of Orchids, whether wild or cultivated, were found fungi, which, living inside the cells of the outer surface, formed lumps like balls of thread. This fact was well known, easy to observe, and furnished one of the best examples of those associations, very common in Nature, between plants and micro-organisms. He had attempted to estimate the extent of this connection, and the degree of dependence the Orchid and its fungus might have on one another. His experiments showed that the fungi of Orchids could live apart from the roots in which they generally lodged. If a small fragment were cut from a contaminated root and sown in a sterilised tube on a suitable nourishing medium, the spores developed freely. They could be transplanted from tube to tube without losing their power to grow. He had pure culture of spores living after four years, without their having been replaced on the Orchids. He had found three species of these Orchid fungi, but he had not yet named them.

Although the fungi could live away from their host-plants, the Orchids themselves required the presence of their guests for their own development. He had sown the seeds of numerous Orchids aseptically with every precaution; but the grains had not freely germinated, and their growth was insignificant. On the other hand, if spores of the appropriate fungus were sown with the Orchid-seeds, they commenced to germinate almost immediately in a very regular manner. With the fungi which he possessed he had obtained not only the germination of species of Cattleya and of Cypripedium, but also the germination of species of Odontoglossum, Phalænopsis, and Vanda, which were regarded by practical men as more difficult. In Nature or in the glasshouse the same thing took place as in the culture-tubes. He had examined a large number of young Orchids which had germinated in very varying conditions, and he had always noticed that they were invaded by the fungus from the beginning of their life. The Orchids were therefore practically dependent on their parasitic fungi, since they did not grow without them. One of the greatest difficulties was to procure the fungus suitable for each kind of Orchid. As a rule, he used the fungi collected from the roots of an Orchid of the same species, or of one nearly allied to that which bore the seeds. That was the best rule he could give, but it might not be an absolutely sure one. Making all reserve necessary in a subject so complex, he believed it was possible that the mere change of the fungus might result in a variation of the species of Orchid in question. The extension of the researches would possibly one day indicate to practical experimenters new ways in the rational methods of culture of a large number of plants, as Orchids were not by any means the only plants which lived in association with fungi.

The U.S.A. Department of Plant-Breeding.

Dr. Erwin Smith, of the Department of Agriculture, Washington, U.S.A., followed with a paper on the work of his department. He said he was a substitute for Dr. Webber, who was unable to be present. The department had been working in the direction of finding a resistant to disease, notably in the Cotton plant, the Water Melon, and the Grape vine; resistance to frost in the case of the Orange and similar fruits; resistance to alkali in the soil; greater productivity and better quality in the flesh of fruits, Wheat, and other products of commercial importance, such as tobacco, cotton, and Maize. They had been highly successful in all cases. For instance, they had produced cotton twice as productive as ordinary cottons, and, in the case of Tobacco, they had obtained remarkable results, as by crossing they had obtained from an inferior quality a leaf undistinguishable from the best Cuban Tobacco leaf.

The Hybridisation of Trees.

Mr. Elwes said he had proposed to speak on this subject later, but he would say what he had to say at this point, as it was apposite to the paper just read. It was difficult to deal with the question of the hybridisation of trees from an economic point of view on account of the time necessary for their culture, but he believed they knew sufficient of the subject to suggest that the planting of trees which had been hybridised should be brought before the Government for serious consideration, exactly as was being done by the U.S. Government. He did not suppose they could prove much in their lifetime, but he could not admit that the subject was out of the question as a scientific matter.

Mr. W. Carruthers, F.R.S., said it was a matter for regret that we seemed to be behind almost every other country in the world in this matter, and he hoped that Dr. Smith had kindled a torch which would not soon be put out. The President of the British Association wished to get ten millions a year for scientific research. He was quite sure the R.H.S. might very well ask for, say, one-fifth or perhaps even one-tenth of that sum for the purpose of carrying out investigations.

Mr. Geo. Gordon said we in this country had been trying for many years to grow Maize as a table vegetable, but with very little success; but a friend of his obtained some Maize from America, without name, but possibly some of the hybrids referred to by Dr. Smith, and it had grown amazingly.

Dr. Smith said fields which were once worthless were now growing good Cottons.

Hybridisation of the Sugar Cane.

Sir Daniel Morris, K.C.M.G., V.M.H., of Barbados, West Indies, addressed the Conference on the "Hybridisation of the Sugar Cane." At one time, he said, all canes were propagated by cuttings, but in 1888 it was discovered, or, rather, re-discovered, that some varieties of cane produced seed. Experiments were carried out, the best canes were selected, and it might be considered that the seedling cane started from that time. The Otaheeti canes had been cultivated up to 1888, but they were attacked by a serious disease, and means had to be found to combat it. The re-discovery came in just at a time when it was wanted. Had it not been for the discovery of seedling varieties Sugar canes would practically have gone out of cultivation. During the last eight years great developments had taken place in the West Indies. The Department of Agriculture there was provided by the Government with £20,000 for its maintenance. Years ago he suggested to our own Government that a grant should be made to that department, but nothing was done until Mr. Chamberlain took the matter up. He was glad to say that they received great assistance from the United States Department, especially in connection with the production of Cotton. As to the seedling canes, they had distributed them to Cuba, Porto Rico, Mauritius, Natal, and parts of India, and everywhere the production had been enormously increased without any extra cost, owing to the cultivation of the new seedling canes. While they were increasing the output and the richness of the Sugar, they were also doing much in making the canes disease-resisting. In Java and elsewhere they had been most successful in cross-fertilising by hand. In conclusion, Sir Daniel read an extract from the final progress report of Professor Harrison, which stated that, owing to the Imperial grant-in-aid (which ceased to be payable from March, 1906), the area occupied by new seedling varieties in the West Indies had extended from 550 acres in 1899 to 20,065 in 1906, and that, during the last five years, the new varieties of seedling canes had given, over large areas, mean results of 8, 19, 22, and 35 per cent. higher than the average of the returns obtained from the Bourbon during the same period.

On the motion of Mr. Elwes, seconded by Sir Daniel Morris, it was decided to send a resolution thanking the United States Department of Agriculture for what they had done for the West Indies.

Sugar Beet.

M. Philippe de Vilmorin, of Paris, addressed the Conference on "Selection and Growing of the Sugar Beet," and on "Hybrid Wheats," subjects in which his father and grandfather had made such important experiments.

Oats, Barley, and Wheat.

Professor C. A. Zavitz, of Guelph, Canada, spoke on the breeding of these cereals. Among other things he said they had now had some 16 years' experience of Oats. One variety they obtained from Russia was now giving an average of 16 bushels per acre per annum more than the variety grown extensively throughout Ontario. That was due to proper selection of seed and the greatest care exercised in all other directions. The question was often asked, was it necessary to change the seed from one soil to another and from one climate to another? They were growing the same variety of Oats, or Wheat, or Barley on the same land for as many as 16 years without deterioration in the yield or quality. That was a very important point. Professor Zavitz displayed, among others, the accompanying diagrams:—

Ontario Agricultural College.
Selection of Seeds and Plants.

Kind of Crop.	Production of Selected		Produce of the seed in three seasons		
	Seeds	Plants	1903	1904	1905
	Lbs. per Bls. per acre.	acre.	Ozs.	Lbs.	Lbs.
Six Rowed Barley (Ward's Chevalier)	68·4	78·3	2·3	68	1,929
Two Rowed Barley (French Chevalier)	44·8	58·6	2·4	56	1,319
Hollien's Barley (Grey Mavle)	47·3	48·6	2·9	98	2,109
White Oats (Siberian)	86·1	91·3	1·6	61	2,102
Black Oats (Ivanette)	79·3	89·6	1·2	74	3,430
Spring Wheat (Wild Gorse)	29·7	36·4	1·0	15	242

So that the introduction of one Barley was worth millions of dollars to Ontario.

Mendel's Laws and their Application to Plants.

Mr. R. H. Biffen, of Cambridge, read a paper on "The Application of Mendel's Laws to the Improvement of Cultivated Plants." He said the whole Wheat industry in this country was in an extraordinary condition, and cried aloud for improvement. Any miller would tell them that there was no English Wheat cultivated at present which possessed what the miller termed "strength"—the capacity to give a loaf which should be light, white, and a type of loaf which the general public demanded now; in fact, the miller would go further and say that there was not a single variety of Wheat in cultivation which would give even a passably good loaf. The consequence was that the price of English Wheat had fallen sadly, and if things went on we should soon be in the position of having no Wheat crop left in this country. The outcome of investigations had been this—that there were a large number of strong Wheats which retained their characteristic strength in this country, and, on the other hand, there were a much larger number of strong Wheats imported into this country which deteriorated at once, and became, if possible, worse than the English varieties. Although it had been shown that we could grow strong Wheats, the "find" was not so important as was thought, because in one of these strong Wheats were sufficiently good, from the farmer's

point of view, to cultivate profitably. The yield was not sufficient to pay for the farming, the straw was not satisfactory, and they ran the risk of losing the crop owing to the yellow rust.

By applying Mendel's laws and crossing with proper varieties, he had succeeded in increasing the quality and output and in conquering the yellow rust. It had been stated that, owing to the yellow rust, Germany lost annually some 20 millions pounds sterling, and it had been estimated that the world was losing yearly no less than 100 millions through the attacks of the rust. He would not vouch for those figures. Personally, he did not believe in their accuracy; but he did believe that very great loss was entailed, and that the application of Mendel's principles would put a stop to it.

A discussion ensued on the foregoing group of papers on cereals,

Mr. Elwes agreed that the subject was extremely important. Speaking as a practical farmer, he said that unless experiments were going to give the farmer what he required, he might waste much time in working for a result which would not be of so much a practical as of a scientific value. Modern milling required two qualities—strength and colour—strength being the ability to absorb water. As long as water was cheaper than wheat, the interests of the miller could not be the interests of the consumer. English white Wheat would make the best bread. For himself, he grew for straw. It was worth as much as Wheat. When Barley straw could be sold at £4 a ton, and Russian Barley bought at £3 16s. for feeding the cattle, they could not ignore the question of straw.

M. Philipe de Vilmorin said that in France they tried fine white Wheat. It stood well, but generally it had a short straw. The definition of "strength" was vague, and had nothing whatever to do with the actual chemical composition of the gluten.

Professor Wittmack said he thoroughly appreciated Mr. Biffen's paper. Strong Wheats could not be grown in climates like that of England. English wheat could not become rich in gluten, for the season was so long that starch was formed owing to the long period of vegetation. Where there was a short period of vegetation, starch was not formed, and the proportion of gluten would be all the greater.

M. Phillipe de Vilmorin said that Fife was a quick-growing variety. It was not a Canadian Wheat, as Professor Wittmack seemed to think, but a German variety.

THE AFTERNOON MEETING.

At the opening of the afternoon session the Chairman handed to the Conference what he described as a remarkable specimen of Rosa sericea pteracantha, cultivated by M. de Vilmorin. It was a species imported from China, remarkable for its brilliantly-coloured prickles, as lately figured in the *Gard. Chron.* He also showed to the Congress a specimen of Dipsacus from Dr. Masters' garden. The seedlings of the twisted variety were found by Dr. de Vries to reproduce the twisted condition to the extent of some 80 or 90 per cent., but Dr. Masters had grown the plants originally derived from Professor de Vries for a succession of years without even seeing a twist in the stem, except in one instance, where he had purposely subjected the plant to frequent mutilation during growth and obtained in consequence a slight twist which so far had not been reproduced in the young plants derived from it.

THE SWAMP POTATO.

Prof. L. Wittmack, of the Royal Agricultural College, Berlin, read a paper on "Solanum Commersoni, the Swamp Potato," which, he said, was found on the *eastern* coast of South America—*not* on the western coast. The Professor went into the history of the Potato, and said they were standing in the presence of a riddle. There were many who thought that the Blue Giant Potato originated from Solanum Commersoni, but others doubted that. If what M. Labergerie said was correct and he did not doubt it they had in Solanum Commersoni a plant which, to use the expression of De Vries, had just come to a state of mutation, and that was certainly caused by the better culture it had received at the hands of M. Labergerie. They would have to wait for more definite results. The Professor displayed several specimens he had received from Messrs. Sutton.

Dr. Erwin Smith (Washington) admitted that he was perplexed.

M. P. de Vilmorin said that Messrs. Sutton had done much to elucidate the problem. It was impossible, he said, for two plants differing in botanical characters to mutate without the intermission of one seedling. There was no instance of [direct] transformation of one species into another.

The Chairman said he believed in mutation, but to believe that the Labergerie Potato was produced as a sport from S. Commersoni was to his mind impossible.

AMERICAN FLORISTS' IDEALS.

Mr. John H. Troy, delegate of the Horticultural Society of New York, read a paper on "Florists' Ideals in the United States of America." Apart from the academic interest in plant-breeding, there was an intensely practical side of the question, and upon the other side of the Atlantic this aspect of the whole subject of plant-breeding received a far greater consideration than did the other. They might be even too practical in America; at all events, their plant breeders set out with extremely high ideals. It was not an excuse for the introduction of a new form that it was merely different from other things; from their ultra-utilitarian standpoint they insisted that it should be better. It was for this reason that economic crops had received, and were receiving, such close attention from their own Government Department of Agriculture. Among other things, they were seeking for disease-resisting varieties, which would put into the hands of the cultivator the means of livelihood at present barred. He added that the American market stood wide open to any flower or plant which would meet their high ideals, but it was no place for the curio raiser to send his productions to, as there was no demand for a thing purely on the ground of intrinsic novelty.

AURICULA AND CARNATION.

Mr. James Douglas, V.M.H., of Great Bookham, Surrey, read a paper on "Cross Fertilisation of the Auricula and of the Carnation." The Auricula, he said, was an old-fashioned favourite, and highly interesting as a garden plant. If they could trace its origin, an interesting problem would be solved. Had the Conference been held in April, he could have exhibited a series of Auricula plants in bloom which would have demonstrated to some extent the variability of the cultivated Auricula and its not infrequent reversion to what might be supposed was its original source. The Auricula had been cultivated in gardens for upwards of 300 years, and they could trace its gradual improvement to the edged form through many years of patient culture. It was generally conceded that the origin of the edged Auricula was Primula Auricula, and the origin of the Alpine Auricula, Primula pubescens; but it had been pretty well proved by evidence obtained from specimens found in the Tyrol that P. pubescens itself was a hybrid between P. Auricula and P. hirsuta. The Alpine Primulas were difficult subjects to cultivate and establish in our gardens, and the same difficulty was experienced 300 years ago.

The Carnation, like the Auricula, was exceedingly variable in its character, and constantly reverted to its original source, or, rather, to the single form which was still to be found on old castles in Normandy, and probably it yet lingered in England, where it had been found growing with its roots searching for a scanty subsistence amongst decaying mortar, and humus in small quantities. The gardener took in hand the progeny of this wilding (which had been improved by ages of cross-breeding and selection); but in many cases the result of over-feeding in Carnations was the same as over-feeding in men and animals—disease attacked the plants sooner or later, and in some cases it was difficult to eradicate it. How the wild Carnation (Dianthus Caryophyllus) had been trained to its high state of perfection it was not easy to say. Hybridisation was not necessary; indeed, it was unlikely. The plant might have been introduced to gardens from its native habitat. Cultivation would soon produce seedlings of varied forms and colours. Some of them would have an extra petal or two, and, saving seed from these by a process of careful selection, semi-double and double flowers would be produced of various colours. This process, as was well known, took much longer in the case of a plant like the Carnation than in that of such a fugacious flower as the Poppy. The Rev. W. Wilks found a variation of the common Poppy in his garden, and, with the instinct of a true gardener, he saved seed from it, and next season the variation was greater, and he set himself the task of changing this noxious weed into a beautiful garden flower. This was an excellent example of what could be accomplished in a few years by one earnest and careful cultivator. The name of the gardener who first obtained a break in the wild form of the Carnation was lost in remote ages. Some thought the Romans brought the Carnation into England, but they did not read much about it until the reign of Elizabeth, when in 1550 Wm. Turner published a Herbal which was dedicated to that monarch. Turner recorded that the flowers had taken on the double form, and added that they were "made pleasant and sweet with the labours and wit of men, and not by nature." The Picotee was merely a coloured variety of the Carnation, but was distinguished from it in having a ground colour of white or yellow with a narrow margin of colour round each petal. A perfect Picotee should have no spots or colour on the petals except the fine line or broader margin of colour. The Carnation might be hybridised by any species of Dianthus. Mr. Douglas added that he understood little of Mendel's Laws, but he knew what he wanted, and generally got it!

AMARYLLIS AND OTHER HYBRIDS.

Mr. A. Worsley, of Isleworth, followed with a paper on "Hybrids Among the Amaryllideæ Cactaceæ, Gesneraceæ and the Genus Senecio."

The Chairman said that Mr. Worsley had mentioned the absence of dominance in the cases he had investigated. It was essential to Mendelian results that there should be a dominance. Mr. Worsley also spoke of a Cineraria as self-fertilised. He supposed there was no doubt about that, as he had found it largely sterile.

Mr. Worsley said every precaution was taken, and there was no doubt about the plant being self-fertilised.

COLD-RESISTING FRUITS.

Prof. N. E. Hansen, of the South Dakota Agricultural College, U.S.A., read a paper on "The Breeding of Cold-Resisting Fruits." He said that it had cost the States many millions for European Apples, which, after all, were of no use in cold regions. A great work was going on and they were producing harder varieties. The same could be said of Plums. Cold-resistance was the characteristic transmitted by crossing. The same was done with Strawberries, and he was raising Strawberries that would stand a cold which froze mercury.

The Chairman: Do I understand that the Strawberry goes on bearing when mercury freezes?

Dr. Hansen: The Strawberry plant lives through it.

The Chairman: Well, that is sufficiently remarkable. I am glad we have none of those difficulties.

THE BREEDING OF FRUITS.

Mr. H. Somers Rivers, of Sawbridgeworth, prepared a paper dealing with the "Breeding of Fruits." At the outset he complained that there was no direct commercial gain to justify any great outlay in obtaining new fruits. When a new fruit was once known, and of proved value, it was quickly propagated, and the raiser had no monopoly. He then went on to deal with Peaches and Nectarines, since it was with regard to the cross fertilisation of these that he had the fullest data. The time which elapsed before a seedling tree could be judged by its fruits and the space it occupied whilst arriving at maturity militated against experiments being carried on on a sufficiently large scale. From the Peach blossom which had been cross fertilised this spring they might confidently expect to be able to judge the result of the combination ten years hence if nothing untoward had happened to the seedling in the meantime; possibly a year or two sooner! The seeds did not always germinate the first year. To ensure this early fruition of one's hopes, the tree must be carefully tended and grown

under glass; by the time it was four or five years old it took up as much room in the orchard house as would a pot tree which was giving a good crop of fruit, and required as much attention. Probably, after all, the new variety would have no especial merit to warrant its retention, and being of no use for firewood, the tree would be burnt on the rubbish heap! The work needed great patience; it was a labour of Sisyphus, but the stone occasionally lodged on the top of the hill! Darwin argued from the supposition that the Peach was derived from the Almond, but his arguments were not very conclusive. If this were so, one might reasonably suppose that amongst very numerous seedlings cases of reversion would occur. Mr. Rivers said he had never noticed any but true Peaches and Nectarines. Darwin further said: "Whether or not the Peach has proceeded from the Almond, it has certainly given rise to Nectarines. Most varieties, both of Peaches and Nectarines, reproduce themselves truly from seed." The following were the results of 35 crosses:—

1. Peach ♀ × Peach ♂ = 5 Peaches 1 Nectarine.
2. Peach × Nectarine = 5 Peaches 3 Nectarines.
3. Nectarine × Peach = 8 Peaches 2 Nectarines.
4. Nectarine × Nectarine = 0 Peaches 11 Nectarines.

From this it would seem that the Peach was dominant. The 11 Nectarine by Nectarine crosses yielded Nectarines, notwithstanding the fact that in 10 of them either the seed, or pollen, parent of both had Peaches amongst their immediate or remote seed parents. Having given the results of other experiments, Mr. Rivers said he could not venture to dogmatise on the above results. No doubt a longer series of recorded crosses would allow definite deductions to be made.

Protection for Raisers of Novelties.

Mr. George Paul then said they could hardly separate without referring to a matter of the greatest interest to them all. He thought there should be some protection for raisers of new varieties. Many well-known raisers were absent that day. The fact was that gentlemen who made experiments did not want to lose the rewards of their labours by making their experiments known. If they had some protection they would be perfectly willing to come forward and state their experience. He had raised a good many things in his time, and some present would be astonished to know the value of a new Rose; £50 or £100 was the total, out of which had to be defrayed the cost of advertising and the cost of the catalogue. He certainly thought they should pass a resolution calling for State protection.

Professor Hansen said he feared there would be some difficulty in the matter. He believed that in law a seedling was regarded as the gift of God, and it would be hard to patent it.

The Chairman suggested that it would be unwise to pass a resolution unless they could give some indication as to how legislation could be enforced.

Mr. Paul said perhaps the certificate of the R.H.S. to the raiser would be a protection.

Professor Wittmack seconded the resolution, saying that the matter in Germany was in the hands of their agricultural society. A buyer of a novelty from a trader dare not sell it within the next three years, so that the raiser might obtain some reward.

Rev. Mr. Wilks: That is by agreement.

The Chairman: You do not contemplate legislative interference?

Professor Wittmack: No.

Mr. Douglas regarded the suggestion as another form of "protection," which the country had already repudiated. He believed in "free trade" in flowers.

Mr. Druery thought there would be enormous difficulty in applying anything like the principle of copyright to plants and fruits, as two or three men might produce the same thing at the same moment.

After some further discussion there seemed to be some misunderstanding as to whether the resolution sought for legislation or not, and on the motion being put many abstained from voting. The motion was rejected by 6 to 5.

Among other papers were Herr F. Burger, of Halberstadt, Germany, on "The Pelargonium" (read by the Assistant Secretary); and A. Paul, of Waltham Cross, on "Varieties of Roses."

The Banquet.

After the Conference the delegates were entertained at a banquet in the hall of the Society. Sir Trevor Lawrence presided.

The Veitch Medals.

In proposing the loyal toasts, Sir Trevor coupled therewith the name of the Queen of Holland, whose birthday anniversary occurred that day. He next rose to present a series of medals. The first were, he said, the Veitch Memorial Medals, which were instituted in memory of the late James Veitch, of Chelsea, and were awarded by the Trustees in recognition of the recipients' work on behalf of horticulture. The first medal went to the President of that Conference, Mr. Bateson. It would have been impossible for any Conference to have had a better chairman. (Cheers.) The next medal went to Professor Johannsen for his discovery of the effect of ether in advancing the inflorescence of flowers. The third medal went to Professor Wittmack, who for many years had been devoted to systematic and practical botany. If the day consisted of 30 hours instead of 24, the President said, he could not enumerate all that the Professor had done for horticulture. The next medal, and the last of the series, he had the honour to offer to M. Maurice de Vilmorin. Everybody was acquainted with the firm of which the Professor was a member. There were two other medals presented by the Society, one of which was to a lady, Miss Saunders, the lecturer on botany at Newnham College, Cambridge. The Gold Banksian Medal had also been awarded to Miss Saunders for her studies on the inheritance of plants. The last medal was awarded to Mr. B. H. Biffin for his researches and discoveries in connection with the Heredity of Cereals.

Sir John T. Dillwyn-Llewelyn proposed the "Foreign and British members of the Conference." The visit had been a useful as well as a pleasant one, and their recollections of their visit to Burford on the previous day would be among the pleasantest of their memories. It had been said that the man was a benefactor to his country who made two blades of grass grow where one grew before, and he thought the work that had been done by the Royal Horticultural Society in bringing together scientific men on the one side and practical men on the other had been a justification for that Conference. It was impossible for any horticulturist not to recognise that in all branches of horticulture a most valuable work had been done by the Hybridist, the Botanist, and the man of science when they joined their forces. The work of the Conference had been fully justified. Much had been done since they held their last conference; so much, in fact, that it necessitated their being called together on the present occasion, and he challenged anyone to say that the meetings of the Conference had not been productive of a great practical work under the able superintendence of Mr. Bateson.

Dr. Hansen was the first to reply. He said, on behalf of the United States Department of Agriculture and his brothers across the seas, he thanked them for their most cordial greeting. What did that Conference mean? It meant that a development of plants and plant-life was becoming an exact science, and that what was formerly a chaos of empiricism was now becoming one of the exact sciences due to recent discoveries in heredity. A clear path had been blazed through the jungle of heredity. New and valuable forms of plants might spring like Minerva full-fledged from the head of Jupiter. He spoke of what the United States Department was doing for Agriculture and Horticulture. It was searching the world for plants better adapted to the various parts of the United States, from Alaska to Southern Florida. The result was that material was secured, and crossing and selection improved that material still further. He again thanked them, and wished the Society all success.

Dr. Tschermak, of Vienna, expressed on behalf of the German and Austrian delegates their deep gratitude for the cordial reception by the society and its Fellows. As an Austrian, he had gladly accepted the invitation extended to his country, and was convinced that the latest developments in the study of hybridisation had been of the greatest interest to the Conference. He had, in company with Prof. De Vries and Prof. Correns, been able to rediscover the Mendelian laws which had so long been neglected. Since then the conditions of the study had been changed by a long series of memorable discoveries, and in England Mr. Bateson had rendered the greatest services to the furtherance of the science of genetics.

M. Philippe de Vilmorin said in France they were not accustomed to after-dinner speeches—an art which was with them of a "recessive" character. The good luck they as scientists enjoyed was not because they dealt in abstract fancies, but because they dealt with things which ladies excepted—were the most fascinating gifts of creation. Every day they lived in close contact with nature, and while benefiting others they profited themselves by the contemplation of nature's beauties. Speaking for himself, when he came to the Conference he was rather doubtful as to the validity of Mendel's laws, but after hearing the papers—especially Mr. Biffen's communication—he was now and would be for ever an apostle of the theory. In conclusion, M. de Vilmorin, on behalf of the Horticultural and Botanical Societies of France, invited the R.H.S. to pay a visit to and hold a conference in Paris.

Sir Michael Foster, K.C.B., F.R.S., was the last to respond to the toast. He said the Conference had been in many ways a remarkable one. It had not attempted to interfere or in any way lay down the lines which this or that nation should follow. He himself did not believe in central international committees which marked out work to be done by this or that nation. He believed that the development of differences was the true basis of unity, as they had already arrived at partial unity by each going its own way.

Mr. W. Bateson (Chairman of the Conference) proposed "The Board of Agriculture, Horticulture, and Fisheries." It was, he said, a great honour for him to propose that toast, because he could not think that in any way they in Cambridge had yet done anything to benefit horticulture. Had it not been for the work done by his friends and pupils and first of all by his colleague, Miss Saunders, whose name had been honoured that night there would have been nothing to justify him in speaking. Turning to the toast, Mr. Bateson went on to say that, as he entered the hall, Sir Thomas Elliott said to him: "I hope you are not going to say 'ditto' to Prof. Ray Lankester, who has asked for 10 millions to fight disease." (Laughter.) Well, he was going to say "ditto" to Prof. Ray Lankester, though, perhaps, with some modifications. They might not all agree in the first place as to the best way of spending the money, but they would be perfectly willing to consider amendments. A precise knowledge of the laws of heredity would give a man a power over his future which no other science had yet endowed him with. He would not say that that knowledge was going to create the millennium for the human race; he would only say that it would change man's destinies profoundly whether for good or evil the future alone would show. He could not expect to see the results in his own lifetime, but the younger generations would see them, and they hoped that the department with which Sir Thomas Elliott was connected would help to make the intervening time pass away quickly.

Sir Thomas Elliott, in reply, said his department fully recognised the great work science was doing. He thought his Board had done something in the direction indicated by Mr. Bateson. They had studied animal pathology, with the result that they had absolutely stamped out most of those serious diseases which once decimated the herds and flocks of this country. He could say the Board had brought about the millennium of the bovine race. Lord Carrington, the President of the Board of Agriculture, was extremely sorry he could not be present, and believed, with all those associated with him, that the work being done by the scientists would confer the greatest benefits on mankind.

Viscount Mountmorres proposed the toast of "Sir Trevor Lawrence, Bt., K.C.V.O., V.M.H., President of the Royal Horticultural Society."

Sir Trevor Lawrence, in responding, disclaimed all merit for resuscitating the Society. The British people, he believed, were really heart and soul devoted to the innocent, delightful, and charming pursuit of gardening, and it was really to that that the success of the Society was due. They owed a great debt of gratitude to their foreign visitors, and he was sure they all trusted they would be able to accept the kind invitation of M. Philippe de Vilmorin. Referring to what the President of the Conference had said, he thought it was beginning to be clearly understood on all sides that unless we in this country took more interest in science we should certainly be left behind in the world. In conclusion, Sir Trevor paid a high tribute to the services of their Secretary, Mr. Wilks, who took an enormous amount of trouble on behalf of the Society.

MISS SAUNDER'S PAPER ON STOCKS.

Owing to the nature of the spacing in the following table as printed in these pages last week, readers may have found it difficult to determine its exact meaning. We therefore reproduce the table:—

(1) Any glabrous sap-colour × any glabrous sap-colour.
F_1 = all sap-coloured glabrous.
F_2 = all sap-coloured glabrous.

(2) Any glabrous sap-colour × any glabrous non-sap-colour (white or cream).
F_1 = all sap-coloured hoary.
F_2 = 9 sap-coloured hoary; 3 sap-coloured glabrous; 4 non-sap-coloured glabrous.

(3) White glabrous × cream glabrous.
F_1 = all sap-coloured hoary.
F_2 = 9 sap-coloured hoary; 7 non-sap-coloured glabrous.

VISIT TO GUNNERSBURY AND KEW.

On Friday the delegates visited the delightful gardens of Mr Leopold de Rothschild, at Gunnersbury. Unfortunately the host was absent in Switzerland, but the guests were received by his son, Mr. Lionel de Rothschild. After walking round the beautiful gardens, the visitors returned to the house, where they were entertained in the double drawing-room at luncheon.

Dr. Erwin Smith, in the names of the foreign delegates, thanked their hosts for all the kindness that had been extended to them.

Sir Albert Rollit joined in the thanks on behalf of the English delegates, and remarked that the advantage of such international gatherings could not be exaggerated.

In the other room similar thanks were expressed.

Professor Johannsen said the gardens were really glorious.

Dr. N. E. Hansen said that they had been the guests of the R.H.S. all the week, and the flower of hospitality was in full bloom that day. He had never seen more beautiful specimens of landscape gardening.

Mr. Robt. Fenn also joined in the vote of thanks.

Mr. Lionel de Rothschild acknowledged the votes of thanks, and said his father wished him to tell them how sorry he was he could not be with them that day.

On their way to Gunnersbury the visitors were taken to the National History Museum of Kensington, where Dr. Rendle and Dr. Smith Woodward acted as guides the former to the Botanical section, and the latter to the Geological section. After luncheon at Gunnersbury the visitors went to Kew Gardens, where tea was served on the lawn.

Thus was brought to a close one of the most successful and certainly one of the busiest and most useful weeks in the history of the Royal Horticultural Society.

BISHOP'S STORTFORD HORTICULTURAL.

AUGUST 1.—The 37th show of the above society was held on this date in the grounds of The Grange, kindly lent by John Barker, Esq., J.P., who is a warm supporter of the society. The exhibition was a great success in every way, and from a horticultural point of view the exhibits were superior to those of previous years.

A large tent was devoted to floral displays, such as dinner tables, and cut flowers. Competition was strong, there being no fewer than 25 entries for decorated tables, and it was pleasing to note that many showed much originality. The classes for dinner tables were restricted to ladies, the 1st prize being secured by Miss BLYTH, of Stanstead, for a charming table decorated largely with Bougainvillea; 2nd, Miss CLAYDEN, Saffron Walden.

Plants.—Groups of plants arranged for effect were pretty though not numerous. The prize in the largest class was won by Col. ARCHER HOUBLON (gr. Mr. Harrison); 2nd, JOHN BARKER, Esq. (gr. Mr. W. Beech), with a heavier arrangement. The class for a smaller group was well contested, Messrs. G. BARNES, WILBY and HOLLANDS receiving the awards in the order named. Mr. BARKER and Mr. W. SMITH both had fine groups of Begonias; the last-named exhibitor, who is usually in the front for these plants, was this year a close 2nd. For Begonias in basket Mr. SMITH won the 1st prize.

In the class for a group of early flowering Chrysanthemums, Mr. G. B. GRIPPER was a good 1st. Good plants were staged in the class for 12 plants in bloom and six foliage plants, Mr. J. WOODS being 1st; 2nd, Mr. BARKER. The same exhibitors were successful in the class for Ferns. Mr. WOODS staged the best Coleus, while Mr. BARKER had the best Fuchsias and the best table plants.

Cut Flowers.—Much space was occupied by these. Strong competition was noticed in most of the classes. The season is not advanced enough for such things as Asters and Chrysanthemums, and the space allotted to these flowers might, with advantage, have been given to other things. In the open class for 24 bunches perennials Messrs. PAUL & SON, Cheshunt, had the finest blooms, Mr. H. C. PULHAM being 2nd. The displays of Sweet Peas occupied much space. Both Mr. HICKS and Mr. BARKER had splendid material in the class for 12 bunches. Prominent winners in the other classes for these flowers were Messrs. ABBOTT, HARRISON, HICK, and KENDALL. Mr. R. B. SMITH had the best 12 show Dahlias, Mr. BARKER the best single Dahlias, and Mr. W. SMITH the best Cactus Dahlias. Mrs. GEE was a good 1st for herbaceous Phlox. Roses were not of exceptional quality; Mrs. A. TAYLOR and Mr. BARKER had the best stands, the flowers though small being very fresh in appearance. Carnations were plentiful and good; Mr. BARKER showed splendid examples of these flowers.

Fruit.—The exhibits of fruit were remarkably good, and the hardy varieties required much space, for, though full early for some kinds, there was no lack of dishes. In the large class for a collection of eight dishes, Col. A. HOUBLON won, having perfect Grapes, Peaches, Nectarines, and Melons; Mr J. BARKER was a close 2nd. For four varieties the same gentlemen received similar awards. Mr. A. JEFFERIES and Col. A. HOUBLON had the best Black Grapes, both showing the variety Madresfield Court. Col. HOUBLON showed the finest Muscat of Alexandria, while Mr. J. BARKER showed the best White Grapes of any other variety than Muscat. Col. A. HOUBLON exhibited the best Melons and the best Peaches. Mr. BARNES won for Nectarines, and the above-mentioned exhibitors were successful in the classes for hardy fruits.

Vegetables.—These occupied a large tent and were of fine quality. Numerous exhibits were displayed by amateurs and cottagers, their produce being excellent in every respect. Mr. A. JEFFERIES was a good 1st for a collection of twelve varieties of vegetables, Mr. J. BARKER being a close 2nd. Mr. KENDALL was successful in the smaller class.

Honorary exhibits contributed greatly to the success of the show. Messrs. RIVERS & SONS, Sawbridgeworth, put up a grand group of fruit trees in pots. Messrs. PAUL & SON showed Roses and herbaceous flowers; Messrs. WALLACE & Co., Colchester, exhibited Lilies and hardy herbaceous flowers; Mr. AMOS PERRY, Winchmore Hill, London, N., had a beautiful array of Nymphæas, Yellow Arums, and other herbaceous flowers; Messrs. BURCH, Peterborough, showed Roses; Mr. KING, Coggeshall, showed Sweet Peas; Mr. R. W. CHAPLIN, Waltham Cross, put up a group of cut Roses; Messrs BATH & Co., Wisbech, had Roses and herbaceous flowers; Messrs. W. COLCHESTER displayed cut flowers; and Messrs. BLACKMORE & LANGDON, Twerton, near Bath, remarkable blooms of tuberous-rooting Begonias. *G. W.*

MIDLAND CARNATION AND PICOTEE.

AUGUST 1, 2.—The sixteenth annual show of the above Society was held on these dates under most favourable climatic conditions. The show was larger and better than that of last year; the exhibits were of high quality and they were well arranged, the arrangements being complete in every detail. The date of holding the show appears to be the time suitable to most exhibitors in the Midland districts, and also to many further north, resulting in a thoroughly representative show. Honorary exhibits gave additional interest to the show, and they were greatly appreciated by the visitors, who do not all understand the critical points of Carnations and Picotees. The classes were arranged to meet the tastes of all lovers of these flowers, and although the florists were prominent with their dressed flowers on cards, it was apparent there is now a strong leaning towards exhibiting these flowers in vases without the use of cards.

Single Blooms on Stands.—The class for twelve self Carnations of dissimilar varieties was won by Mr. A. W. JONES, Stechford, the similar smaller class for six flowers only being won by Rev. C. A. GOTTWALTZ, Droitwich. Mr. JONES was also 1st for twelve yellow ground Picotees in dissimilar varieties, being followed by Mr. C. H. HERBERT, Acocks Green. The best half-dozen yellow ground Picotees, dissimilar, were those of Mr. H. NORMANSELL, Edgbaston; 2nd, Mr. J. KEEN, Southampton. Mr. JONES was again to the top for twelve fancy Carnations of dissimilar varieties, beating Mr. W. H. PARTON, who was placed 2nd. Mr. C. ALCOCK, Liverpool, showed the best six fancy Carnations in distinct varieties; 2nd, Rev. C. A. GOTTWALTZ. Messrs. W. PEMBERTON & SONS, Walsall, were to the fore in the class for twelve white ground Picotees, dissimilar, the 2nd prize being awarded Mr. W. H. PARTON. Mr. F. W. GOODFELLOW, Walsall, had the best six white-ground Picotees in the smaller class. The best dozen flaked Bizarre Carnations of dissimilar varieties were those put up by Mr. C. H. HERBERT; while the premier half-dozen blooms in the similar smaller class were shown by Mr. R. G. RUDD, Birmingham. Mr. PARTON was a prominent winner in the classes for Carnations shown without cards. He took 1st prize for twelve self Carnations, dissimilar; for twelve fancy or yellow ground Carnations of dissimilar varieties; and for twelve distinct varieties of self yellow ground Picotees or fancies, these last-named being staged in groups of threes. He also won the 1st prizes in all the six classes for vases of Carnations of scheduled colours. The best six selfs, dissimilar, were shown by Mr. C. CHATWIN, Handsworth; 2nd, Mr. H. SKEELS; and the best six fancies or yellow grounds, dissimilar, by Mr. H. NORMANSELL, Mr. H. SKEELS being again 2nd.

Premier Blooms.—Bizarre Carnation "Master Fred," shown by Mr. W. H. PARTON; flake Carnation "Gordon Lewis," shown by Messrs. PEMBERTON & SONS; heavy-edge white ground Picotee "Cato," shown by Mr. R. G. RUDD; light or wire-edge white ground Picotee "Lavinia," shown by Messrs. PEMBERTON & SONS; heavy-edge yellow ground Picotee "Walter Heriot," shown by Mr. R. G. RUDD; light-edge yellow ground Picotee "Urania," shown by Mr. A. W. JONES; yellow ground fancy Carnation "Sam Weller," shown by Mr. A. W. JONES; self Carnation "Mrs. Eric Hambro," shown by Mr. A. W. JONES.

Medals were offered by the Birmingham Botanical and Horticultural Society for the exhibitors taking the largest number of prizes in the various sections Mr. W. H. PARTON being the most successful exhibitor, he was awarded

the large silver medal, and also the silver medal for single blooms. Mr. A. W. Jones secured the bronze medal. The silver medal offered to the most successful exhibitor in the smaller classes was awarded to Mr. R. G. Rudd.

HONORARY EXHIBITS.

The following awards were given for non-competitive displays of flowers:—

Silver Gilt Medals:—Messrs. Bakers, Wolverhampton, for a collection of climbing and other Roses; Messrs. Hewitt & Co., Solihull, for a collection of border flowers, Carnations, &c.; Mr. A. F. Dutton, Iver, Bucks., for American Tree Carnations; Messrs. Gunn & Sons, Olton, Birmingham, for hardy flowers, including some fine garden Phloxes.

Large Silver Medals:—Messrs. Simpson & Sons, Birmingham, for Sweet Peas, including several new varieties of merit; Messrs. Davis & Son, Yeovil, for tuberous-rooting Begonias; Mr. Wm. Sydenham, Tamworth, for a collection of hardy flowers and Carnations.

Silver Medals:—Messrs. James Randall & Sons, Shirley, Birmingham, for Tree Carnations; Mr. Robt. Sydenham, Birmingham, for Sweet Peas arranged in rustic table ornaments; Messrs. Bick Brothers, Olton, for hardy flowers; Messrs. Phillips & Taylor, Bracknell, Berks., for border Carnations; G. A. Kenrick, Esq., Edgbaston, Birmingham, for Campanula pyramidalis.

WEST DERBY HORTICULTURAL.

August 6.—The above Society held its Sixteenth Annual Exhibition of Flowers, Fruits, and Vegetables on the above date in the Rectory grounds. The show was one of the best held by the Society. In the principal Class, that for a group of plants arranged for effect, Mr. Geo. Osborne (gr. to Dr. Cooke), The Brook Private Asylum, carried off the premier honours, being closely followed by Mr. Bright (gr. Mr. Knowles). Although the season has been very dry and the nights cold, the exhibition of Vegetables were, on the whole, good. Mr. Chas. Young, Floral Nursery, arranged a table of Carnations. *G. O.*

GUILDFORD GARDENERS' MUTUAL IMPROVEMENT.

July 25.—The second annual summer show of the Guildford and District Gardeners' Mutual Improvement Association was held at Cross Lanes, the residence of the mayor (Alderman F. F. Smallpiece, J.P.), this year's president of the association, who had placed his grounds at their disposal. It is a non-competitive exhibition, instituted with a view of promoting an active interest among gardeners. Only members of the association can exhibit, and the number of entries had grown from 15 at last year's show to 66—a most gratifying improvement.

CHESTERFIELD ROSE AND HORTICULTURAL.

August 1.—The annual exhibition of this society was held in the Queen's Park, and proved an unqualified success. The class for 72 Roses attracted six competitors and resulted in a splendid show. Messrs. Perkins, Coventry, were placed 1st; 2nd, Messrs. Harkness & Co., Hitchin; 3rd, King's Acre Nursery Co., Hereford. In the class for 36 Roses Messrs. H. Drew & Co., Longworth, Berks, obtained 1st prize, the 2nd going to the Hereford firm. Tea Roses were shown in good condition, the prizes going to King's Acre Nursery Co., Messrs. Harkness & Co., and Messrs. H. Drew & Co., in the order named. Mr. J. Bacon was 1st for 4 vases of Roses, 2nd King's Acre Nursery Co. The best bouquet of Roses was shown by Messrs. R. W. Proctor & Sons.

The groups of plants arranged for effect to cover 200 square feet were this year circular in form. Mr. T. J. Nelson (gr. to A. T. H. Barnes, Esq.), Ashgate Chesterfield, put up a fine lot of plants arranged in the best style. Four groups were arranged in the class for a group of plants occupying an area of 100 feet of space; Dr. G. Booth, of Holywell House (gr. Mr. D. Money), gaining the 1st prize.

An attractive feature of the show was the competitive trade displays exhibited on 25 feet run of tabling at the side of the tent. Messrs. R. W. Proctor & Sons, the local firm, were successful with a fine exhibit of floral devices, &c.

MARKETS.

COVENT GARDEN, August 8.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asters, p. dz. bchs.	2 0- 3 0	Mignonette, dozen bunches ...	2 0- 3 0
Calla æthiopica, per dozen	2 6- 4 0	Montbretia, dozen	2 0- 3 0
Centaurea cyanus, doz. bunches...	2 0- 4 0	Odontoglossum crispum, per dozen blooms	2 6- 3 0
— suaveolens ...	3 0- 4 0	Pelargoniums, show, per doz. bunches ...	3 0- 5 0
Coreopsis grandiflora, per doz. bunches ...	1 6- 2 0	— Zonal, double scarlet... ...	4 0- 5 0
Carnations, per dozen blooms, best American various ...	1 6- 3 0	Poppies (Iceland), per dz. bnchs.	1 0- 2 0
— smaller, per doz. bunches	1 0- 2 6	— Shirley ...	1 0- 1 6
— Malmaisons ...	3 0- 8 0	Pyrethrums, dozen bunches ...	1 6- 2 6
Cattleyas, per doz. blooms ...	9 0-12 0	Rhodanthe, per dz. bunches ...	2 0- 3 0
Chrysanthemums, per dz. blooms	1 6- 2 6	Roses, 12 blooms, Niphetos ...	1 0- 2 0
Eucharis grandiflora, per doz. blooms... ...	3 0- 4 0	— Bridesmaid ...	1 0- 1 6
Gardenias, per doz. blooms... ...	1 6- 2 0	— Kaiserin A. Victoria ...	1 0- 2 0
Gladiolus, various, per dz. bnchs..	9 0-12 0	— Caroline Testout	1 0- 2 0
— The Bride ...	3 0- 4 0	— C. Mermet ...	1 0- 1 8
— Brenchleyensis, per doz. spikes	1 6- 2 0	— General Jacqueminot	1 0- 1 6
Gypsophila elegans, per doz. bunches ...	2 0- 3 0	— in bunches, per dozen	2 0- 4 0
— paniculata ...	2 6- 4 0	— Liberty ...	1 0- 2 0
Gaillardias ...	2 0- 3 0	— Madame Chatenay	1 0- 2 6
Lilium auratum ...	2 0- 3 0	— Mrs. J. Laing	1 0- 2 6
— candidum, per bunch	1 6- 2 0	— from the open, various kinds, per dz. bnchs.	2 0- 5 0
— lancifolium, rubrum and album	2 0- 3 0	Scabiosa, per doz. bunches ...	2 0- 3 0
— longiflorum ...	3 0- 4 6	Statice, per dozen bunches ...	3 0- 4 0
Lily of the Valley, p. dz. bunches	6 0- 9 0	Stephanotis, per dozen trusses	3 0- 5 0
— extra quality ..	9 0-12 0	Stocks (double white) per doz. bunches ...	2 0- 4 0
Marguerites, white, p. dz. bunches	2 0- 3 0	Sweet Peas, per doz. bunches ..	1 0- 3 0
— yellow, per dz. bunches ...	2 0- 3 0		

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, per doz.	5 0-10 0	Fern (French), doz. bunches ...	2 0- 5 0
— — medium, bunch ...	1 6- 2 0	Hardy foliage (various), per dozen bunches	2 0- 3 0
— — short sprays per bunch...	0 6- 0 9	Hardy Grasses, per doz. bunches...	2 0- 3 0
— Sprengeri ...	0 6- 1 0	Ivy-leaves, bronze	1 6- 2 0
Adiantum cuneatum, doz. bun.	4 0- 6 0	— long trails per bundle... ...	1 0- 2 0
Berberis, p. bunch	2 6- 3 0	— short green, doz. bunches...	2 0- 3 0
Croton leaves, per bunch	1 0- 1 6	Moss, per gross ...	5 0- 6 0
Cycas leaves, each	1 6- 2 0	Myrtle, per dozen bunches ...	2 0- 5 0
Fern, English, p. dozen bunches	0 9- 1 0	Smilax, p. dz. trails	2 0- 5 0

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

	s.d. s.d.		s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0	Cyperus alternifolius, dozen ...	4 0- 5 0
Aralia Sieboldi, per dozen ...	4 0- 6 0	— laxus, per doz	4 0- 5 0
— larger	9 0-12 0	Dracænas, per doz.	9 0-24 0
Araucaria excelsa, per dozen ...	12 0-30 0	Euonymus, per dz.	4 0- 9 0
Aspidistras, green, per dozen ...	18 0-30 0	Ferns, in thumbs, per 100... ...	7 0-10 0
— variegated, per dozen	30 0-42 0	— in small and large 60's ...	16 0-25 0
Asparagus plumosus nanus, doz.	6 0- 9 0	— in 48's, per doz.	4 0-10 0
— Sprengeri, doz.	6 0- 8 0	— in 32's, per doz.	10 0-18 0
— tenuissimus per dozen ...	8 0-10 0	Ficus elastica, per dozen	9 0-18 0
Asters, per dozen	3 0- 6 0	— repens, per doz.	4 0- 6 0
Begonias (tuberous), per dozen	4 0- 5 0	Fuchsias, per doz.	4 0- 6 0
Bouvardias, per dz.	6 0- 8 0	Heliotrope, per dz.	3 0- 5 0
Campanula isophylla alba, per dozen ...	6 0- 8 0	Hydrangea Hortensia, per dozen	8 0-18 0
— Mayi	6 0- 8 0	— paniculata ...	6 0-18 0
Chrysanthemum segetum ...	3 0- 6 0	Kentia Belmoreana, per dozen	12 0-18 0
Clematis, per doz.	8 0- 9 0	— Forsteriana, per dozen ...	12 0-21 0
— in flower ...	18 0-24 0	Latania borbonica, per dozen ...	12 0-18 0
Cocos Weddelliana, per dozen	9 0-18 0	Lilium auratum ..	18 0-24 0
Coleus	3 0- 5 0	— longiflorum, per dozen ...	12 0-18 0
Coreopsis	4 0- 6 0	— lancifolium, per dozen ...	18 0-24 0
Crassula coccinea	12 0-18 0	— tigrinum, per bunch	1 6- 2 0
Crotons, per dozen	12 0-30 0	Lily of the Valley, per dozen ...	18 0-30 0

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

	s.d. s.d		s.d. s.d.
Marguerites, white, per dozen ...	4 0- 8 0	Petunias, double, per doz. ..	3 0- 4 0
— yellow... ...	15 0-18 0	— 48's	4 0- 6 0
Mignonette, per dozen	4 0- 6 0	— single	3 0- 4 0
Pelargoniums (Zonals), per dozen	3 0- 5 0	Rhodanthe, per dz.	4 0- 6 0
— Ivy-leaved, per dozen	5 0- 8 0	Roses, per dozen ..	12 0-18 0
— show	6 0- 9 0	Selaginella, dozen	1 0- 6 0
		Spiræa japonica, per dozen ...	6 0-10 0
		Verbena Miss Willmott, per doz..	4 0- 6 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples (English), ½ sieve... ...	3 6- 3 9	Lemons:	
Apricots (French), per box ...	1 0- 1 9	— Messina, case	10 0-16 6
— ½ sieve... ...	10 0 —	— Naples, p. case	20 0-28 0
Bananas, bunch:		Lychees, per box...	0 10- 1 0
— No. 1 quality...	6 6- 7 6	Melons, each ...	2 0- —
— No. 2 quality...	5 6- 6 6	— Valencia, case	8 0-12 0
— Extra quality...	8 0- 8 6	Nectarines, English	4 0-18 0
— Giants, per bunch	9 6-10 6	Nuts, Cobnuts, per doz. lb... ...	8 0 —
— Jamaica ...	4 6- 6 0	— Brazils, new, per cwt. ...	45 0 —
— Loose, per dz.	0 8- 1 3	— Spanish, p. bag	42 0-43 0
Cherries (French),		— Barcelona, per bag	24 6 —
— boxes	1 0- 2 0	— Monkey Nuts, per bag ..	18 0 —
— French, squares	2 0- 3 6	— Walnuts, dried, cwt.	35 0 —
— English, ½ sieve	5 0-12 0	— Chestnuts, Italian, per bag ..	13 6-15 0
— ¼ sieve... ...	3 6- 6 0	— Cocoa nuts, 100	10 6-13 6
— English pecks from	3 9- 5 6	Oranges, per case:	
— Big. Napoleon	7 0- 7 6	— Murcia ...	16 0-18 0
— (English), per ½ sieve	5 6- 8 6	— Jamaica ...	10 6-11 0
— Elton Hearts ..	7 6- 9 0	— Blood	9 6-11 6
— Big. Napoleon	8 0-13 0	Peaches (English), per dozen ..	3 0-18 0
Currants (English), red, per handle	1 0- 1 6	— French, ½ sieve	5 6- 6 6
— ½ sieve (French)	6 0- 7 0	— boxes	1 4- 1 6
— Black, ½ sieve...	7 6- 8 6	Pears (French), Williams, boxes	3 0- 3 3
— English pecks	3 0- 3 6	— French, Williams, crates ..	5 9-10 0
— ½ sieve... ...	4 0- 4 6	— Californian, pr. case	7 0- 8 0
— English, white, per gallon ...	1 6- 2 0	Pineapples, each ..	2 10- 5 0
Figs, per dozen ...	1 0- 3 0	Plums (French), box	0 8- 1 3
Grapes (English), Black Hambro, per lb.	0 10- 1 6	— French, ½ sieve	3 3- 7 6
— Alicante ...	0 9- 1 4	— Italian, baskets	10 0 —
— Colmars ...	1 0- 3 0	— Californian, boxes	5 6-12 0
— English, Muscat, per lb. ...	1 0- 2 0	Raspberries, per punt.	0 4- 0 6
Gooseberries (English, ½ sieve ...	3 0- 4 6	— tubs	16 0 —
Greengages (French), per box	2 0- 2 1	— per peck ...	2 0- 3 0
— Italian, baskets	3 3- 3 6	Strawberries,	
— French, ½ sieve	5 0-12 0	— gallon	1 3- 2 0
— ,, ¼ sieve	4 0- 5 6	— punnetts ...	0 6- 0 8

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Beans, Broad, per packet	0 6 —	Onions (Valencia), case	6 0- 6 6
— broad (English), per bush.	2 0 —	— Egyptian, bag..	4 6- 5 0
— Home grown, per lb	0 8-0 10	— pickling, per bushel...	3 6- 4 0
— Channel Island	0 8-0 10	— French, ½ bag .	2 3 —
Beetroot, bushel ...	0 10- 1 0	— Spring, dozen bunches ..	1 0 —
Broccoli, sprouting, per bushel	1 6- 1 9	Parsley, 12 bunches	1 0- 1 6
— per doz. ...	1 0- 2 0	— bushel.. ..	2 6 —
Cabbages, Spring, per bag ...	1 6 —	Peas (French flats)	3 0- 6 0
— red, per bushel	1 6- 2 0	— English, per bushel	4 0 —
Carrots, French pad	3 0 —	Potatos (new):—	
— per bag, unwashed ...	2 0- 2 6	— Channel Island Kidneys ...	0 2½- 0 3
— new, per dozen bunches ...	4 0 —	— Jersey, cwt. ...	6 6 —
Cauliflowers, per tally	3 0-10 0	— St. Malo, cwt.	6 6 —
Chow Chow, p. dz.	1 6- 2 0	Rhubarb, per doz. bundles ..	2 6 —
Cucumbers, dozen	2 0- 2 6	Spring greens, per bushel	1 3 —
Endive, per dozen	1 8- 2 0	Salsafy, per dozen bundles ...	4 0 —
Horseradish, foreign, per dozen bundles ..	20 0-24 0	Tomatos:—	
Leeks, 12 bundles	1 6- 3 0	— English, per lb.	2 0- 3 0
Lettuces, Cos, per dozen	2 0 —	— small selected	2 0 —
Marrows, per doz.	3 0- 4 0	— Seconds, per 12 lbs.... ...	0 10- 1 0
Mint, per dozen ...	2 0- 3 0	— French, per crate	3 0- 4 0
Mushrooms (house) per lb.	0 6- 1 3	Turnips, per doz. bunches ...	1 0- 1 6
— Buttons, per lb.	0 9- 1 3	— bags	1 0 —
Mustard and Cress, per dozen pun.	1 0- 1 6	Turnip Tops, bush.	1 0- 1 6
		Watercress, per doz. bunches ..	0 6 —

Remarks.—English Nectarines are scarce at 1 dozen. Peaches are a fairly good supply. English Green Flesh Melons are also scarce, and good samples are realising high prices. Trade generally is fair. *A. H. Rides, Covent Garden, August 8, 1906.*

POTATOS.

Lincolns, 70s. to 80s.; Bedfords, 60s. to 70s.; Kents, 80s. to 90s. *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Very few growers were represented [illegible] morning, and those who had plants f[illegible] Sweet is still sending good plants of Ver[illegible] and other varieties; he has also some [illegible] cluding the variety Queen Alexandra [illegible] with a brisk sale. I have noted this var[illegible] growers' stands; the flowers are a pure w[illegible] journey they do not stand up well. Mr. W. [illegible] bringing good Ivy-leaved Pelargoniums, Galilee [illegible]

nally good for so late a period in the season. The same grower's Zonals are also good. And up to Saturday last he had good Mignonette. This plant is also well displayed by Mr. Mott, who still fills his stands well. Lantanas, in well-flowered plants, being very pretty. His Fuchsias are also good. Mr. F. Rochford has nice Fuchsias; Liliums in pots are good, and Rhodanthe is well flowered. Coreopsis from Mr. Lewington is first class. Campanula isophylla alba and C. Mayi are displayed by Mr. T. Childs, and by other growers. Palms are well supplied by Messrs. H. Low & Co., in various sizes; also by Mr. Bause. It appears likely that growers who are keeping up a succession will do better with their plants in the future, as many who started growing them because the seeds were cheap are now giving them up. I also learn that young plants are not so abundant on the Continent as they were a year or two ago. Ferns are abundant, though some of the large growers have empty stands. I noted some fine specimens of Nephrolepis exaltata from Mr. Denson; among all the new varieties of Nephrolepis, the above still remains a favourite. Asparagus plumosus, tenuissimus, and A. Sprengeri are marketed by Messrs. Whiteley, Ltd., in excellent condition.

CUT FLOWERS.

Owing to the excessive heat trade in cut flowers is very precarious—yesterday morning good white flowers were wanted. Eucharis and best white Roses were scarce late in the morning. Many of the Roses are now of indifferent quality—they are certainly offered at very low prices. Carnations are over plentiful, the American varieties, which are usually regarded as winter flowers only, are of as good quality now as at any time. An American grower whom I recently met expressed his surprise at seeing the fine blooms exhibited at the last meeting of the Royal Horticultural Society. Sweet Peas are still plentiful, but many are of very poor quality. Mr. P. Ladds still keeps up a good supply of Chrysanthemums; they are confined to the three varieties previously named. Gladiolus Brenchleyensis is very fine; there are also some good spikes of the choicer hybrid varieties, but these being cut with short stems do not sell readily. G. Colvillei "The Bride," is still very plentiful. Asters are abundant in white, pink, mauve and purple shades. Liliums in all the usual market sorts are good. Mr. Werring is bringing in Gypsophila paniculata flore pleno; this is equally as light and graceful as the old single form, almost as pure a white, and it remains in condition for a long time when cut. I find it comes quite pure white and is much prettier if given a little shade from the time the flowers begin to open. Scabiosa caucasica has been plentiful from several growers. Double White Stocks are good, and now that they are so much used for foundations for floral wreaths, &c., they are always in demand. Statices in several varieties are abundant. *A. H., Covent Garden, Wednesday, August 8, 1906.*

GARDENERS' DEBATING SOCIETY.

CROYDON & DISTRICT HORTICULTURAL.—

Greenwich Park was the rendezvous of this society for their evening outing on Wednesday the 1st inst., the attraction being the floral bedding, which is of a very fine standard of excellence. In all cases careful study has been given to blend colours together in effective display. In one bed was a fine collection of Cactaceous plants, some of the members being of great age. A feature is the correct labelling of the plants, which creates an excellent medium for information. A visit was also paid to the nursery. The old avenue of Chestnuts was planted somewhere about 1670. A walk through the noted Queen Charlotte's garden was taken, and following down to almost the foot of the hill at the Greenwich entrance a very interesting inspection was made of the tunnel, which, in its winding path, takes one under the hill to Blackheath.

Obituary.

F. W. MEYER.—We regret to record the death on Monday last of Mr. F. W. Meyer, of Exeter, who had been connected with the firm of Robert Veitch & Son for the last thirty years, for the most part of which time he has been their landscape gardener. A little over a month ago Mr. Meyer was taken ill whilst on a business journey in the neighbourhood of Taunton, but in two or three weeks recovered sufficiently to resume work. He returned to Exeter on Saturday last, and, after a day or two's illness, suddenly died of heart failure. Locally, through attending the leading flower shows in the West of England, and taking occasional journeys for Messrs. Veitch, he was well known and much esteemed. As landscape gardener he carried out important works in laying out many years ago the grounds at Bystock, near Exmouth, the public parks at Poole, Devonport, Wellington, and recently at Sherborne. Under his care, exclusive landscape designs were completed for the late Mr. Fisher, of Newton Abbot, Lord Lilford, at Lilford Hall, Mr. Paris Singer, at Paignton, and many others in different parts of England. The public grounds at Exeter were a few years ago greatly improved under designs prepared by Mr. Meyer, and at the time of his death he was in the midst of the details of his plan, which had been accepted, for laying out a rockery and Alpine garden for the Royal Horticultural Society at their new place at Wisley, the Society having entrusted the scheme to Messrs. Robert Veitch & Son. Mr. Meyer was a frequent contributor to the horticultural Press of England and of his native country, Germany.

ANSWERS TO CORRESPONDENTS

CARNATIONS: *A. M.* There are many as good, and some better.

COTTON SEEDS: *Clifton.* Seeds of the Cotton plant need to be germinated in a warm greenhouse, as the Gossypium is a tropical plant, and very tender. Peach "stones," as they are termed, may be planted out of doors, and the seeds will germinate freely there, the plant being perfectly hardy.

EXHIBITING VEGETABLES: *Correspondent.* The usual plan of exhibiting vegetables adopted by the best exhibitors is to construct a staging similar to that shown in fig. 46. This, it will be seen, is in shape much like an office desk, with the usual raised portion (A) at the back (the diagram does not show this back as high as it is usually seen, but the exhibitor can modify the height as required). The back can be made of light boarding, and in front is a square portion (B), upon which the boards forming (C) rest, and slope to the front. The boards forming the

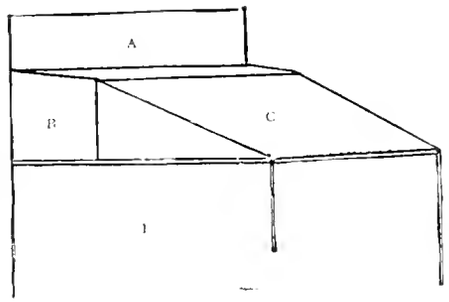


FIG. 45.—STAND FOR EXHIBITING VEGETABLES.

platform (C) often meet (B) about three-parts up, and not quite to the top as is shown in our diagram. Against (A) are usually placed Cauliflowers, Cabbage, or Broccoli in pyramids, with Marrows, Cucumbers, and such-like large vegetables on (E). The space (C) is usually reserved for dishes containing Tomatos, Mushrooms, Capsicums, Potatos, &c., with the larger subjects at the back. A bedding of Parsley is placed over the whole staging before arranging the vegetables. The table (E) is represented in the sketch by the three bottom vertical lines in the diagram.

GOOSEBERRY SHOOT: *Scott Crescent.* The "blight" on the Gooseberry shoots are the cast skins of one of the Aphides, probably Myzus ribis, but as there were not any living or dead insects on the shoots or leaves we cannot say with certainty what the species is. If there are any living aphides on the bushes you should spray them with a solution of paraffin emulsion, or soft soap and quassia extract. We could not find any trace of insects or fungi on the Apple leaves, but they are of a very poor colour.

GLADIOLUS: *H. S.* There is no disease present in the bulbs that could be attributed to fungi or insects, and the failure is in some way due to treatment, which can only be determined on the spot.

GRAPES: *Small Loaf and A. B.* The injury is known as "white rot"; remove all diseased shoots and spray the plants with a rose-red solution of Condy's fluid. When the plant is resting in winter drench every part, also the ground with a solution consisting of 1 pound of sulphate of copper in 25 gallons of water.

HEAD GARDENERS' POSITIONS: *D. F.* The publication of your letter would do no good. You should join the British Gardeners' Association, which is the proper body to discuss this and similar matters.

INVESTMENT OF CAPITAL: *E. H.* We are reluctant to give any advice on such a subject, but it has been proved in numberless instances that to embark with a small capital in a business you do not understand is to court disaster. You should be content to work under others in order to acquire the technical and practical knowledge that is essential.

LILAC FORCING: *Secretary.* We cannot undertake to say that Lilac forcing would be a profitable undertaking for any particular market gardener, because so much would depend upon how the business was managed. It is, however, we believe, a fact that growers do pursue the practice with profit, less or more according to circumstances. The wholesale prices obtained in Covent Garden market are recorded throughout the season in the market returns published in these pages.

MARKET GARDENING: *J. A. W.* A book by Mr. R. L. Castle has recently been published on this subject by Mr. John Lane, Vigo Street, London, W.

NAMES OF FRUITS: *J. D.* We do not recognise the Gooseberry.—*R. J.* (next week).

NAMES OF PLANTS: *Cestrian.* Venus' Looking Glass (Specularia Speculum.)—*G. Broadfoot.* Prunus serotina.—*A. L.* (*Bougival*). Campanula versicolor.—*C. E. A.* 1, Lychnis chalcedonica; 2, Funckia ovata; 3, Aconitum variegatum; 4, Lupinus polyphyllus albus; 5, Galega officinalis; 6, Lysimachia thyrsiflora.—*Gladiolus.* Send to some grower of these plants. The shrub is Carpenteria californica, lately figured in the *Chronicle.*—*Old Subscriber.* The larger flower is Odontoglossum citrosmum; the spray Oncidium incurvum.—*A. Y. L.* 1, Liparis purpurea; 2, Pleurothallis rubens.—*G. N.* Trichopilia tortilis.—*L. Hawkins.* 1, Lonicera capritolium; 2, Veronica salicifolia; 3, Erica cinerea alba; 4, Phacelia congesta; 5, Spiræa Ulmaria fl. pl.; 6, Senecio Jacobæa.—*A. M.* 1, Epipactis latifolia; 2, Senecio Jacobæa; 3, Dipsacus sylvestris; 4, Lythrum Salicaria.—*A. P. N.* Allium (next week); Spiræa callosa.—*W. F.* The early stage of Phallus impudicus, one of the most stinking fungi known. We advise you not to eat it.—*T. O.* 1, Sanguisorba officinalis; 2, Coreopsis grandiflora; 3 (next week); 4, Tanacetum vulgare; 5, Jasminum officinale; 6, Inula Helenium.

NOTICE TO LEAVE: *M. W.* We think under the circumstances the gardener is entitled to a month's notice, but in this, as in all other such cases, there should have been an agreement at the time of making the engagement.

ONIONS: *G. K.* The maggots present are undoubtedly those of the Onion-fly. The Cauliflower roots are eaten by wire-worms.

ORCHID COMPOST: *A. v. d. G.* The potting material in which your Orchids are growing is destroyed by the grubs of a small fly, one of the Mycetophilidæ, or "Fungus flies," so called from the grubs of many species living in fungi—the family contains a very large number of species. The flies might be killed by fumigation, and the grubs by soaking the potting material with lime-water, but whether the lime-water would have a prejudicial effect on the roots of the plants would have to be determined.

PLUM TREE: *F. J. Myers.* The trees are infested by the caterpillars of the "Vapourer Moth" (Orgyia antiqua). Spraying with soft soap emulsions is not of much use in the case of these hairy caterpillars, as the insecticide does not reach them so as to choke up their breathing pores, but they would probably be poisoned if the leaves were sprayed with "Paris green" or arsenate of lead. The females are wingless, and when they leave the cocoons do not wander far away, but as often as not deposit their eggs on the surface of the cocoons which they have just left. These cocoons should be searched for and destroyed.

ROSE AND PELARGONIUM: *F. J.* Kindly send specimens, and we will examine them.

STRAWBERRY PLANT: *Glasgow.* The injury is caused by a fungus Sphærella fragariæ having attacked the fruiting stem. See reply to *E. P. C.*, in our issue for June 2.

TESTIMONIAL: *Enquirer.* Your former employer is not obliged to give you, or any one else, a testimonial on your behalf; but if he should do so it must be strictly accurate.

TOMATOS: *Ignoramus.* Your plants are badly affected with the fungus Cladosporium fulvum. We fear you can do nothing this year. Next year try spraying with Bordeaux mixture, and cleanse the house thoroughly.

VINE LEAVES: *W. G.* The spots are minute scale insects, Lecanium, and can readily be removed by the use of a sponge and soft soap

COMMUNICATIONS RECEIVED.—W. P.—R. J.—Quality—H. B. C.—H. W. F. M.—M. C.—J. C.—W. F. G.—H. L.—F. W. G.—H. R.—J. G.—G. F.—W. H. A.—G. H. H.—S. E.—H. H. S.—E. H. W.—T. W., Newnham—D. F.—Prof. M. F.—B. S., Roy. Bot. Soc.—Mrs. I. L. R.—H. F. McM.—W. J. T., Limuca—G. R.—T. H.—O. T.—H. A. P. (telegram).

NEW SWEET PEAS. TO THE LEFT LYDIA DYKE, WHITE; TO THE RIGHT AUDREY CRIER, ROSE COLORED; AT THE TOP DORA COWPER, IVORY-YELLOW. FROM MR. C. W. BREADMORE, WINCHESTER.

Temple Press Ltd., Printers, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,025.—SATURDAY, August 18, 1906.

CONTENTS.

ILLUSTRATIONS.

GUNNERSBURY PARK.

IN our last issue we published some descriptive notes and illustrations of Gunnersbury House and its gardens, one of the places to which Mr. Leopold de Rothschild invited the members of the Hybridisation Conference. The Gunnersbury Park estate adjoins this one, but is much more extensive. The residence, in two rooms of which the members were entertained at luncheon, is a handsome specimen of the Tuscan order, its south front being almost in a line with that of Gunnersbury House. The Gunnersbury Park residence was built by one Alexander Copeland, from whom it was purchased by the Baron Rothschild of that day. It is only in recent years that Mr. Leopold de Rothschild purchased Gunnersbury House, owing to its nearness to the Park. Although it is situated but a few minutes' walk from Kew Bridge, and less than a mile from the noisome slums of Brentford and the unattractive purlieus of Acton, the Park estate consists of about 200 acres of land, and in walking through the grounds the visitor could easily imagine himself to be very far away from town, for the trees screen any object beyond the boundary of the park that would otherwise obtrude itself into the view. It is only too true that the fine old trees at Gunnersbury are failing each year, and that many of the grand Lebanon Cedars have perished during the last quarter of a century. This is particularly noticeable by the lake, which is shown at Fig. 48. Several of the Cedars to be seen in the illustration on either side of the "Temple" have had to be removed during the past two years. Having said this much, however, we may also say that the grandest feature of the park still consists in its noble trees. No one familiar with Gunnersbury would expect to see so many aged Cedars as there are still alive, and some of the deciduous trees, especially the Elms, are magnificent specimens. Mr. de Rothschild rightly sets great store upon these, and everything that is possible is done to fight the conditions that would be likely to hasten their decay. We suppose that it is a generally accepted fact that in urban districts, at least, more large trees die from the effects of drought than from any other cause, and it is also necessary to remember that after a certain age a tree is less able to extend its root system into fresh soil, consequently it becomes more necessary than ever to help it as far as possible by applying rich top-dressings over the principal roots.

All this is done with scrupulous care at Gunnersbury, and the head gardener, Mr. George Reynolds, who has been in these gardens for more than 30 years, superintends the chaining and shoring up of great branches that might otherwise be broken off by high winds or by heavy snowstorms.

The Ponds.

In the illustration we have already referred to, one of the three ponds can be seen, and as it is used in winter time for skating and other games, no water lilies are cultivated in the water. But there are two other ponds, and one of these is shown at Fig. 51. The visitor at this date would hardly suppose that it is on the site of an old clay pit, and that where the tower can be seen there used to stand an ordinary brick kiln! Yet such is the case, and now the effect is both park-like and picturesque, such is the work of the landscape gardener and "time." The third pond is on the other side of the grounds, and very near to Gunnersbury House gardens. It is in this pond that the Water Lilies are cultivated, and at the present time they are in most vigorous leaf and blossom.

The Fruit and Plant Houses.

On a recent visit we commenced an inspection of the gardens from the gardener's residence, and we were fortunate in having Mr. Reynolds for our guide. Immediately at one's right hand is the long Peach and Nectarine case, which is 360ft. in length and heated with hot water pipes. The trees are in excellent condition, but most of them have yielded their crop of fruit for the present season. The three latest varieties, however, were still laden with fruits hardly ripe. These were Nectarine Peach, Sea Eagle and Princess of Wales. Next to this case (in which the trees are grown against the wall and are protected with a glass front) is the old Rosary. This house has been altered to provide suitable conditions for the Odontoglossums. On the site where the centre bed used to be a tank has been placed, and over the tank of water is the stage supporting the Odontoglossums. From the present condition of the plants it is evident that they will thrive well in their new house. Suspended in baskets we noticed a good plant of Asparagus Sprengeri variegatus, which requires some amount of humoring to make a big specimen, and several plants of A. myriocladus. This latter species is very plumose and very decorative; the young growths will certainly extend seven feet high or more. In close proximity there are two long span-roofed houses, each of which is divided into two or more divisions. In these we noticed considerable batches of Lobelia tenuior, Celosias, Gloriosa superba, G. Rothschildiana, Allamanda Hendersoni (affording an unusually grand display of colour), A. Williamsi, etc. There being many plants of Gloriosa superba in flower, it was interesting to notice how much the species varied in colour in the individual plants. Some were very much richer than others, and richer than any we remember to have seen. A high-roofed house close by contained a good batch of Eucharis grandiflora, the pretty but seldom seen Griffinias, Amasonia punicea, Ixoras in considerable numbers in full flower, Acalypha hispida (in 10-inch pots), and Vanda teres. This shy blooming Vanda flowers every season here and has continued to do so for a long period. As Mr. Reynolds remarked to us, the atmosphere of the house seems to suit them perfectly. There are always decaying leaves in the house, and these serve to keep the atmosphere moist. In winter, when the plants are at rest, the roots are kept dry, and the amount of moisture necessary to keep the pseudo-bulbs from shrivelling is supplied from the atmosphere to the pseudo-bulbs themselves. But if at any time this proves to be insufficient, water is afforded to the roots at once, for if much shrivelling were permitted to take place the result would be bad. The variety Miss Joachim was still in flower.

The tree Carnations are cultivated to give their best display in September and October, but the variety Duchess of Portland was already opening some flowers, and another good pink variety, largely cultivated at Gunnersbury, is Mrs. Leopold de Rothschild. The Cattleyas in the next division looked well, and C. labiata will soon be throwing up flowers.

The Vineries at Gunnersbury Park are of large dimensions, and each vine is cultivated to produce a liberal crop of fruit. The first we entered contained four divisions. In two of these the vines have been renewed by Mr. Reynolds, and in the other two they have not. The Muscats of Alexandria have been planted for 30 years, at least, yet are bearing excellent bunches, as is also Chasselas Napoleon. The "great" vinery has a span roof and contains chiefly black Hamburgh Grapes.

In few, if any, private gardens are Figs cultivated in such large quantities as they are in both of the Gunnersbury gardens. The Fig house at the "Park" is narrow, long, and divided into three divisions. The trees are planted against the back wall, upon which they are first trained, and then trained along the roof towards the front of the house. The varieties consist of Brown Turkey, Negro Largo, and White Marseilles. The first division is started into growth each year in

November, and the three divisions furnish ripe fruits from April until October. Pot trees are grown in other houses to increase the supply late in summer and in autumn.

We had occasion to refer so fully last week to the pot fruit trees under Mr. Hudson's care, that it will not be necessary to write much on this subject now. Mr. Reynolds has a splendid lot, in full fruit, of Plums, Nectarines, and Peaches, and the crops are exceedingly liberal. On one quite ordinary specimen of Sea Eagle Peach (in a 10-inch pot) we counted ten heavy fruits.

Melons are grown in large numbers, the varieties Princeheim and Gunton Scarlet being among those most favoured. In addition to Melons of the ordinary type, both Cantaloupe and Syrian Melons are also cultivated, as they meet with much appreciation.

Some of our readers may remember the illustration which appeared in these pages on April 10th, 1873 (p. 544), showing the pair of very large tree Ferns (Dicksonia antarctica) growing at Gunnersbury. They had been sent to Baroness Rothschild by Governor Ducane, from Mount Wellington, Tasmania, and weighed 23 cwt. each. One of these is still alive and growing well, but the other was killed owing to a workman accidentally upsetting a can of paint over the crown!

Other smaller specimens have been purchased since that time.

There are still several features in the open air at Gunnersbury deserving remark. One of these is the large batch of Crinum Powellii at one end of one of the glass houses, which are in full flower at the present time; another is an excellent specimen of the Exmouth variety of Magnolia grandiflora now coming into flower; a third the standard, and other large plants of Pelargoniums on the terrace and in other suitable situations; and a fourth the flower garden in which each bed represents a basket. All the beds are filled with Pelargoniums, either pink or white exclusively, and the "handle" is of Roses, Clematis, &c.

We noticed a single-flowered, rich scarlet-coloured zonal Pelargonium, named Paul Crampnell, that was exceedingly effective. Against the exterior of one of the houses such old varieties of Fuchsias as Venus de Medici, Rose of Castile, &c., were trained 15 feet high. Chrysanthemums are grown in very large numbers, and many other plants to which we cannot refer in detail.

Mr. Reynolds, whose portrait we have pleasure in presenting (p. 125), is to be congratulated on the excellent condition of everything in this remarkable garden.

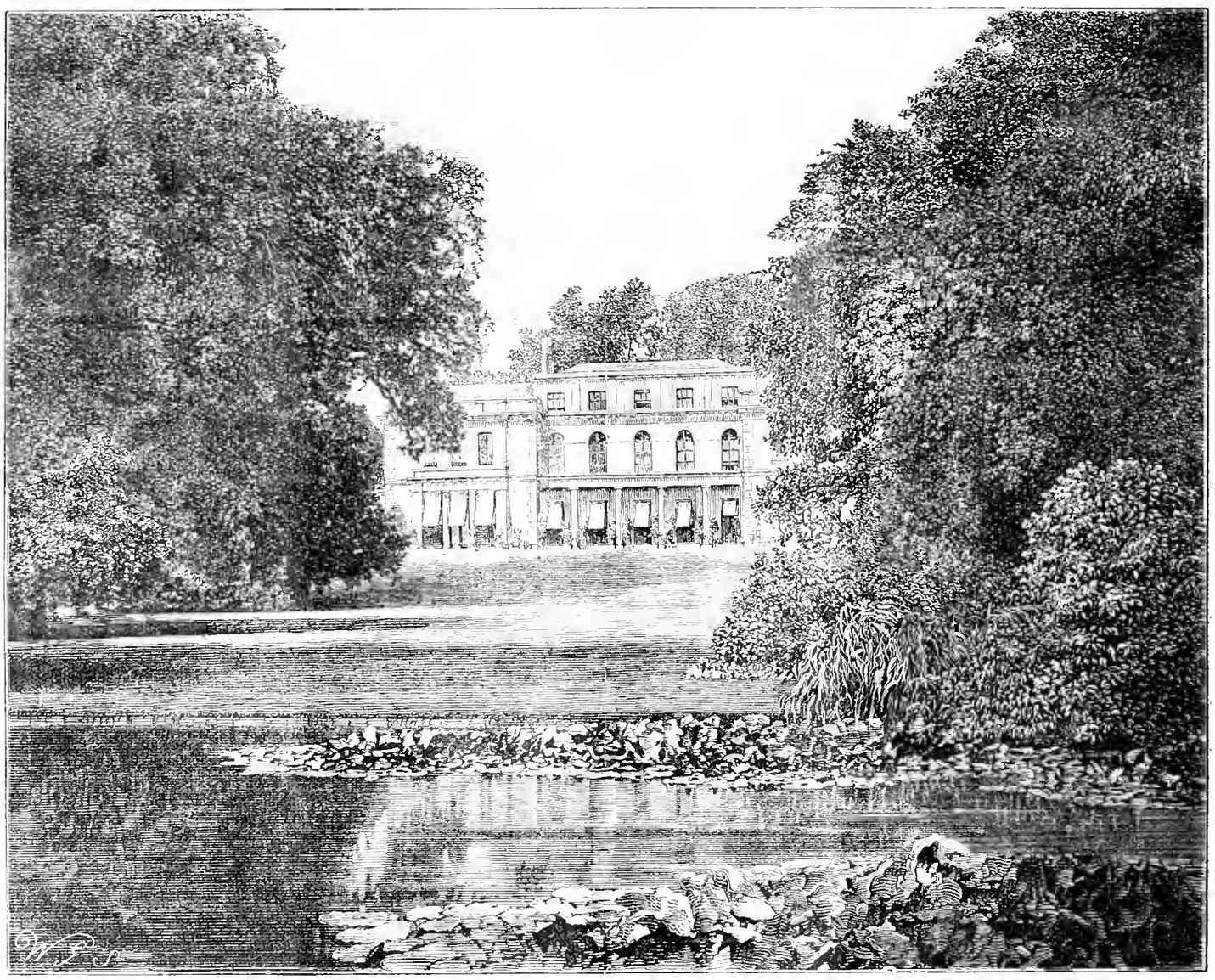


FIG. 47.—GUNNERSBURY PARK, ACTON, THE RESIDENCE OF LEOPOLD DE ROTHSCHILD, ESQ.

NEW OR NOTEWORTHY PLANTS.

HAPLOCARPHA SCAPOSA, HARVEY.*

HAPLOCARPHA is a small genus of Compositæ, closely related to and much resembling the acaulescent species of Venidium and Arctotis, and comprises five species, all natives of South Africa; only two of them have yet been introduced into cultivation, viz., H. Leichtlinii, which I described in the *Gardeners' Chronicle*, 1883, vol. 19, p. 78, and the present species (see p. 124, fig. 49). As H. scaposa is the commonest and most widely distributed of all the species, it is somewhat remarkable that its introduction has been so tardy, for so far as I can discover it was first introduced about 12 years ago, having flowered in Cambridge Botanic Garden in November, 1894, and I have no knowledge of its having previously been figured. It was originally discovered in 1813 by the celebrated traveller Burchell, on Bruintjes Hoogte, a mountain in Somerset Division, and has since been gathered by many collectors. It seems to be confined to the eastern part of South Africa, ranging eastwards from Uitenhage and Somerset Divisions, through Tembuland and Griqualand East to Natal, and northwards through the Orange River Colony, Transvaal, Rhodesia and Nyassaland

* HAPLOCARPHA SCAPOSA, HARVEY. *Flora Capensis*, vol. 3, p. 465. H. Thunbergii, *DC. Prod.*, vol. 6, p. 491, not of Lessing.

as far as Fwambo at the south end of Lake Tanganyika.

The specimen of H. scaposa here figured (fig. 49, p. 124), was kindly contributed by Mr. W. E. Gumbleton, of Queenstown, Co. Cork, with whom it is now in flower; a specimen has also been sent to Kew by Mr. R. A. Beamish, of Ashbourne. It is a stemless, herbaceous perennial, which is probably not hardy enough to withstand our winters. The rootstock is short and branching, sometimes with a tendency to produce short creeping stolons. The leaves are all radical, 3-9 inches long and 1-3 inches wide, varying from lanceolate to elliptic, tapering into the petiole at the base, obtuse at the apex, more or less obtusely toothed, or sometimes nearly entire, five to seven-nerved, green above and with a white felted tomentum beneath. The peduncles in wild specimens are usually 9-18 inches long, but under cultivation become 2-2½ feet long, they are white-tomentose and leafless. The flower heads are radiate, 1½-2½ inches in diameter, clear yellow, woolly on the involucre. The achenes have a tuft of long hairs at their base and are crowned with numerous long, narrow, taper-pointed pappus scales. It is by the character of the achenes that the genus Haplocarpha is distinguished from Arctotis: in the former they are solid, whilst in Arctotis they have two cavities on one side. *N. E. Brown.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 64-70.)

(Continued from page 106.)

5.—SOUTHERN COUNTIES.

Surrey.—Our soil is sandy and very sterile. Frost destroyed all the Plums and Nuts when in blossom, and greatly affected the crops of Apples, Pears, Currants, and early Strawberries. In addition, the Pear midge has been greatly destructive, destroying the whole crop of Pears in some cases. *C. J. Salter, Woodhatch Lodge Gardens, Reigate.*

—— The primary cause of the short crops of Pears and Plums was the severe frosts of April. Had the spring been less cold, we might have seen a perfect glut of the fruits named. *Alex. Dean, 62, Richmond Road, Kingston-on-Thames.*

—— The general cause for failure in the fruit crops was frost in the late spring. The soil here is a light, sandy, almost gravelly, loam. *Geo. Kent, Norbury Park, Dorking.*

Sussex.—Our soil varies from light to clayey loam, the sub-soil being sandstone impregnated with iron. All kinds of fruit trees had abundance of blossom, promising bountiful crops, but the severe frosts ruined the Plums, Pears, and Black Currants while they were in bloom. *Alex. Reid, Possingworth Gardens, Cross in Hand.*

—— The late spring frosts and the cold east winds adversely affected the fruit crops in this district. The nature of our soil is flinty-loam on a sub-soil of chalk. *W. H. Smith, West Dean Park Gardens, Chichester.*

—— The crops of Apples, Pears, Plums, and Apricots were more or less ruined by the cold, bleak winds and severe frosts of April and May. Our soil is a good, retentive loam. *G. Grigg, Ashburnham Place Gardens, Battle.*

—— The late spring frosts and the cold winds caused much damage to all stone fruits. Some varieties of Strawberries, including Royal Sovereign and President, also suffered severely, but Monarch and Sensation carried good crops. Crops of Raspberries and Gooseberries were very heavy, the fruits being of good quality. Our soil is a very stiff clayey loam, overlying a sub-soil of yellow clay. *W. Langridge, Ote Hall Gardens, Burgess Hill.*

—— The frost on June 2 caused Cherries and Pears to drop largely, favoured the attacks of a terrible pest of Black Aphis, and created spot on Apples and Cherries. The soil of these gardens is a mixture of poor loamy clay and sand, and one that requires a lot of fe[illegible] *W. H. [illegible], Leonardslee Gardens, Horsham.*

—— Late frosts and continued east winds, coupled with a continuation of cloudy weather,

Fig. 48.—Gunnersbury Park, Acton.

(For text see page 121.)

mostly affected the fruit crops in this district. Our soil is of a light nature, overlying a sub-soil of chalk. *E. Burbury, Castle Gardens, Arundel.*

—— The late spring frosts and the cold east winds mostly affected the fruit crops in this district. The sub-soil is sandy rock. *H. C. Prinsep, Buxted Park, Uckfield.*

WILTSHIRE.—A heavy shower of rain, followed by 12° of frost on April 29 completely ruined the Cherry and the Plum crops in this district. Pears also suffered from these causes, and, in addition, the Pear midge has been very troublesome. Our soil is rather heavy, and fairly deep, with a stiff, yellow, clayey sub-soil. *H. Gandy, Longleat Gardens, Warminster.*

—— The severe frosts during the time the young fruits were setting was ruinous to the fruit crops, there being as much as 10° and 12° of frost during the time the Pear trees were in bloom. Fortunately, Apples escaped much injury. The soil in this district is a sandy loam, with, in most parts, a sub-soil of stiff clay. All young fruit trees require a flag stone or concrete bottom to prevent the tap root going downwards. *John Bannerman, Lackham Gardens, Lacock.*

—— Long-continued frosts and cold winds in April and May, and severe hail storms on June 16 and 23 were most injurious to all kinds of fruits. The soil is a chalky marl, overlying a sub-soil of gravel. *Thomas Challis, The Gardens, Wilton House.*

—— The prevalence of late spring frosts and cold easterly winds, bringing blight in their train, have had disastrous effects on the fruit crops of this district. The soil consists of brash limestone. *W. Tinley, Malmesbury.*

—— The weather has been very favourable to most fruits, and crops, on the whole, are good, with the exception of Pears, which, when in bloom, suffered considerably from the east winds. The soil of this district is mostly a friable loam, with either a chalky or a gravelly sub-soil. *S. H. Tucker, Longford Castle Gardens, Salisbury.*

7.—ENGLAND, N.W.

CUMBERLAND.—Pears and Plums are a failure here, owing to a wet and sunless May. The soil is of medium quality, resting on clay. *Thomas Tunstall, Carleton Hill, Penrith.*

LANCASHIRE.—A cold week culminating in 15° of frost when Pears and Plums were in flower ruined our fruit crops, and is the cause of the worst season for fruit in 25 years. Only twice before have we had anything approaching such ruin, for we have been fortunate in having crops when others have been without. Our sub-soil is clay, but by cultivation we have a couple of feet of good soil that will grow most vegetables well. *Wm. P. Roberts, The Gardens, Cuerden Hall, Preston.*

—— Our short crops are attributable to the cold, uncongenial weather in spring time when the trees were in bloom, and to the severe drought during July and August, which still further reduced the crops where it was not possible to afford water. The soil is a heavy loam on clay. *E. F. Hazelton, Knowsley Gardens, Prescot.*

—— After an abundant show of blossom, the fruit crops are very poor, excepting those of small fruits. Late spring frosts, with cold winds, did extensive damage. Swarms of insect pests followed the cold winds, and all the young leaves, especially those of Apples, were either eaten or badly disfigured. Our soil is a very light loam, with a poor, gravelly sub-soil, some parts being very near a rock base. *Wm. Ashton, Wrightington Hall Gardens, Wigan.*

—— The fruit crops in this district were badly affected by a succession of frosts during the month of April, and by a prevalence of cold easterly winds throughout the month of May. Our soil is moderately heavy; the sub-soil consists of red sandstone formation. *Benjamin Cromwell, Clewley Gardens, Allerton, Liverpool.*

—— Late spring frosts badly affected the fruit crops in this district. Bullfinches did much damage to fruit buds in the early spring. Strawberries, Gooseberries, Raspberries, and Red Currants are all good crops. The soil is a heavy loam, and in some parts clay. *Thomas Wyton, The Gardens, Abbeystead, Lancaster.*

—— Cold north-east winds, followed by blight, when the blossom was setting are the causes of our indifferent crops of fruits. The soil consists of a light limestone, overlying a sub-soil of rotten rock and clayey "sammel." *G. H. Tansley, Witherslack Hall Gardens, Grange-over-Sands.*

—— Late spring frosts appearing when Plums and Pears were in bloom, proved disastrous, especially to Plums and Damsons, of which fruits we have practically none. Our soil is a dark, sandy loam, on a sub-soil of white sand. *Ben Ashton, Latham House Gardens, Ormskirk.*

FIG. 49.—HAPLOCARPHA SCAPOSA: FLOWERS CLEAR YELLOW, THE INVOLUCRE BEING WOOLLY. (For text see page 122.)

Westmoreland.—The severe frosts in spring time, and the prevalence of cold east winds during May were the causes of failure in our fruit crops. The soil is of a heavy nature, and rests on a clay sub-soil. *F. Clarke, Lowther Castle Gardens, Penrith.*

—— Spring frosts and bullfinches ruined a promising crop of all fruits. Our soil is gravelly and thin. *W. A. Miller, Underley, Kirkby Lonsdale.*

—— In this district the failure of the fruit crops was due to the prevalence of cold, drying winds during the latter part of April and of early May, and, to a great extent, to the continued frosty nights of May. The soil is principally limestone. *Wm. Gibson, Levens Hall, Milnthorpe.*

—— The commencement of the season gave promise of exceptional crops of all fruits, but expectations have not been realised, owing to a wet and cold May. This is especially disappointing as we were free from severe late frosts. The soil varies from a stiff, heavy loam to a light, sandy soil, overlying a sub-soil of clay and gravel. *James Coupland, Brougham Hall Gardens, Penrith.*

6.—ENGLAND, S.W.

Cornwall.—The Apple crop was adversely affected in the spring by late frosts and the Codlin moth. Trees on walls also suffered, especially those of Peaches and Nectarines, and in many places the trees were completely killed. Plums in the large orchards in this neighbourhood are a failure, and many of these trees have also been killed. The general fruit crops are very disappointing after the great promise in early spring. Our soil is an adhesive loam on clay. *Wm. Sangwin, Trelissick Gardens, Truro.*

Devonshire.—The late spring frosts did considerable damage generally among the fruit crops. In the neighbourhood of Sowton, near Exeter, a severe hailstorm also did much injury. The "silver-leaf" disease has appeared in this district, and is spreading among Plums. The soil is good; much of it is heavy clay, but in the Plum-growing district it is generally a sandy loam. *Andrew Hope, 38, Prospect Park, Exeter.*

—— A thick mist and fog from the sea during the last seven days of May were very harmful to the fruit crops generally. Trees which had their fruit set previous to the fog are carrying heavy crops, but much of the blossom on the later sorts was destroyed. The soil is of a very light nature, and rests on the shaly Devon waterstone. *George Baker, Membland, Newton Ferrers, Plymouth.*

—— I cannot account for the poor crops of Peaches and Nectarines, for the blossom on these trees was abundant, and the set appeared good, but the fruits failed to swell, except those on south walls. As the majority of our trees occupy an eastern aspect, I imagine the trouble was the east winds during April and the early part of May. Boisterous winds from the north-west are answerable for many Apple trees in the district being quite fruitless. Our soil is a deep loam, inclined to sandy, with a red sandstone sub-soil. *James Mayne, The Gardens, Bicton, Budleigh Salterton.*

—— Plums and Damsons showed a paucity of blossom, but Apples carried an abundance of flowers. Cold, harsh winds, however, prevailed, while the last-named trees were in bloom, and this, together with the advent of wet frosts later, when fruits were just "set," caused failure. Strawberries have been a poor crop, as the rain came too late to benefit them. The soil here is a heavy loam, partly on sand and partly on clay. *T. H. Slade, The Gardens, Poltimore Park, Exeter.*

—— The late May frost and the continuation of cold nights in spring time are the causes of a poor fruit season. Our soil is a stiff loam on a clay bottom. *Thos. Seward, Tattram Gardens, Plympton.*

Gloucestershire. The frost in April and a continuation of east winds ruined the fruit crop here. Our soil is a stiff loam with blue lias clay as a sub-soil. The garden lies low, and catches the late spring frosts badly. We had 7° and 8° frost for several nights in early spring, and 10° on April 27. *Wm. Keen, Bowden Hall Gardens, nr. Gloucester.*

—— The dearth of Plums and the scarcity of Gooseberries and Cherries in these gardens I attribute to frost in April. Our Apple trees were badly infested with Aphis after the blooming period. There was a wealth of blossom, and I quite expected an over-average crop, but was disappointed. Our soil is a friable to clayey loam, overlying the old red sandstone. *John Banting, Tortworth Gardens, Falfield.*

—— All fruit trees gave promise early of good crops, but the frost on April 27—we registered 14°—ruined our Pears and Plums and that part of the Gooseberry crop on the outside of the bushes. We have the smallest crop of stone fruits of several seasons. *W. H. Berry, Highnam Court Gardens.*

—— The continuous cold winds and frosty nights of April ruined the Plum and Pear blossom, and quite spoilt these crops. Peaches and

Mr. George Reynolds, gardener at Gunnersbury Park.
(See page 121.)

Nectarines, where not well protected, also suffered badly. Apples bloomed rather later than is usual, and thus escaped the frosts. Our top soil is a light loam, the sub-soil being limestone brash. *William Nash, Badminton Gardens, Chippenham.*

—— Apples showed an abundance of blossom, but did not set well. Pears are a fair crop, but Plum trees have scarcely any fruits. All bush fruits are carrying good crops, especially Black Currants. Strawberries promised an enormous crop, but the fruits damped badly while colouring, owing to the very heavy rainfall during the last week in June. Our soil is a stiff loam on a sub-soil of clay. *W. Daffurn, Elm tree House Gardens, Tilbury.*

—— The Apple crop in this district is above the average. Pears on walls are a fair crop, but the disastrous frosts of April 20 and 30 and May 1 and 2 ruined both Pear and Plum blossoms on orchard trees. The crop of Cherries on walls is light. Peaches, Nectarines, and Apricots are a fair crop. Gooseberries are good, but Red and Black Currants are poor, and the bushes are much blighted. Raspberries and Strawberries are a good crop, and the fruits are of good flavour. The soil in this garden is a loam, resting on limestone. *F. C. Walton, Stanley Park Gardens, Stroud.*

—— Pear trees were laden with blossom, and escaped the late spring frosts, but the Pear midge attacked the best dessert kinds, and the greater number of fruits had to be hand-picked and burned. Apples are abundant on all trees, and require liberal thinning. Plums on wall trees that were protected are an average crop, but Plum trees in the open are carrying poor crops, owing to frosts destroying the fruit buds. Gooseberries are scarce; the bloom was damaged by frost. Other bush fruits are all good. The Strawberry crop is under the average, especially that of Royal Sovereign, which was badly attacked by mildew. Givon's Late Prolific carried a good crop of fruits. *A. Chapman, Westonbirt, Tetbury.*

—— The soil here is strong loam on clay. The severe frosts in April destroyed the crops of Peaches, Nectarines, Apricots, Cherries, Plums, Pears, Currants, and Gooseberries, and checked the growth of the trees, especially those of Peaches and Nectarines. *Alfred E. T. Rogers, The Gardens, Sudeley Castle, Winchcombe.*

Herefordshire.—On April 26 we experienced a heavy fall of snow, followed by 10° of frost. This ruined the bush fruits, Pears, and Plums, and considerably thinned the fruits on two long walls of Peaches and Nectarines, although they were well protected by half-inch mesh nets and by coping boards. Our soil is a good heavy loam resting on limestone. *George Mullins, Arthur Castle Gardens, Ledbury.*

—— Pears, Plums, Cherries, and small fruits are all a failure owing to sharp frosts when the trees were in flower. One or two nights we registered as much as 10° frost. *C. Smith, Barton Court Gardens, Colwall, Malvern.*

Monmouthshire.—Frost and the very cold nights during the time the Plum trees were in flower caused the failure of these fruits in this district. We are also greatly troubled with insect pests. Some standard trees of Apples are infested with red spider, which it seems impossible to eradicate. The soil here is a very cold, tenacious loam on a heavy clay, which rests on the old red sandstone. *W. F. Woods, Llanfrechfa Grange Gardens, Caerleon.*

—— I consider the general scarcity of Plums and some other fruits due to the low temperatures and sunless weather that prevailed during the blossoming period. The wind came from the north or east, and this caused more damage than did frosts. The soil here is a heavy clayey loam, resting on marl, or clay, and the nature of the weather during spring and summer has consequently greater influence upon the growth of trees than is usually the case. *T. Coomber, The Hendre Gardens.*

—— Our crops were spoiled by the dry easterly winds and sharp frosts during the latter part of April and up to the middle of May. Nearly all our fruit trees present a very stunted appearance for the time of year. Notwithstanding the long spells of easterly winds and sharp frosts during the latter part of April and up to the middle of May, Apples and Pears are a fair average crop in this neighbourhood. But in most cases stone fruits are a total failure, the only exceptions being where the trees are in a sheltered position, or where they received temporary protection during their flowering period. The soil here is a strong, tenacious loam overlying boulder clay. *Henry Townsend, Maindiff Court Gardens, Abergavenny.*

—— The Apple crop at one time promised to be a record one, but later it became very badly attacked by blight, more especially on trees growing in grass orchards. Pears are exceptionally clean and healthy. Cherries and Plums are a total failure through the late frosts. *John Basham, Fair Oak Nurseries, Bassaley, Newport.*

Somersetshire.—The cold easterly winds in the springtime did much damage to the fruit trees when they were in bloom. The soil in this

district is of a heavy nature, and lies on the lias rock or limestone, which makes it very cold in winter. *W. Hallett, Cossington, Bridgwater.*

—Seldom has there been a finer promise of fruit early in the year, but the cold weather destroyed most of the Pear and Plum blossoms. Trees on walls we protected by evergreen branches, fish-nets, &c., and in this way we saved a nice lot of the fruits. Where the trees were not thus protected we have no crop. Raspberries have been a great success. Some kinds of Apples suffered much, while others growing beside them have an enormous crop. *J. Crook, Forde Abbey Gardens, Chard.*

WORCESTERSHIRE.—The present is the most disastrous season I ever had to chronicle. We had twelve hours' snowstorm, followed by 16 frost on the night and early morning of April 25 and 26, and this completely destroyed the blossom and fruits that were already formed. Our soil is a medium loam, overlying the new red sandstone formation. *A. Young, Witley Court Gardens, Stourport.*

—The weather of March and April was an alternation of frost, cold winds, and rain, with 19 days in March and 22 in April on which frost was registered. On April 26 we experienced a fall of 4 inches of snow. There was never such a wealth of blossom on the trees. Apple trees when in flower were subjected to a spell of dull weather. The earliest Strawberries, opening in the third week of May, were all black in their centres, though there had been no frost since May 4. *A. A. Pettigrew, Hewell Grange Gardens, Redditch.*

—On April 26 snow fell all through the day, accompanied by wet sleet until 6.30 p.m., when it commenced to freeze. At 8.30 p.m., there was 5° of frost, and the whole of the flowers of Plums, Pears, etc., were frozen hard and stiff. The thermometer registered 10° during the night, which no fruit blossom can possibly withstand. The soil in these gardens is a heavy loam, bordering on stiff clay, with a subsoil of red marl, soft rock. *William Crump, Madresfield Court Gardens, Malvern.*

(To be continued.)

LAYERING CARNATIONS.

THIS work, if not already done, should be proceeded with without delay, as an interval of six weeks must be allowed the layers to form roots before they are severed in October. It is a mistake to introduce over-much fine soil or sand for the roots to penetrate, rather use turfy loam and a little flaky leafsoil, strewing in a quantity of river sand as each layer is pegged in position. By this system the plants will be well rooted when lifting time arrives, and each can be removed with a nice ball of soil attached. When finely-sifted soil is used, it is difficult for water to soak in, and by far the greater quantity runs to waste. During hot, dry weather, the layers should be watered through a small rose every other day or thereabouts until roots and new growths are formed. Before "tongueing" the shoots for layering, each plant should be examined, and the grass or foliage removed up to the point where the slit is to be made. To make the cut, take hold of the young growth with the left hand, and with a sharp knife in the right make a longitudinal incision towards the apex of the shoot about 1 inch long, slipping the knife in just below the joint. This done, gently press down the shoot, which will be the means of opening the severed portion, and with a crooked peg made 4 inches long (the stalks of the common bracken fern are admirable for the purpose) fasten it into the soil, taking care to place a couple of handfuls of mould under each shoot before layering, and a little above it after the shoots have been pegged down. Souvenir de la Malmaison varieties require similar treatment to that detailed above, and after they are severed they require to be planted out in a frame, where they can be lightly shaded for a fortnight. *J. Mayne.*

INDIAN NOTE.

LILIUM POLYPHYLLUM.

ACCORDING to the botanical survey of Northern India, the above charming Lily is indigenous to British Gurhwal, Kumaon, and Cashmere.

Personally I have found two colonies of it, and am aware of a third growing on Cheena Pahar, which is a vast rocky jungle-clad pile in Naini Tal, upwards of 8,000 feet in elevation; the two former colonies are at about 7,300 feet elevation. I have nowhere seen this Lily diffused loosely over large areas, but in strictly colony form.

Moreover, where this Lily thrives the conditions are in all respects identical. It may be said to have selected for itself lofty, cool situations, with a north-west aspect, which is the one in the Kumaon Himalayas turned most directly away from the sun. Though as the sun for four or five months is practically vertical, it must not be assumed that any actual sunless places exist in India through the summer months unless it be for a short time in morning and evening. It is just such situations with a north-west aspect and considerable elevation that will often give the heaviest of jungle and the finest of soil deposits, and this happens to be the case with Lilium polyphyllum in every instance quoted.

The forest is of Indian Oak, arboreal Rhododendron, a species of Acer, &c., together with the world-wide bracken Fern and sundry Himalayan grasses—such are the immediate surroundings of L. polyphyllum. In such situations the Indian Oak, of which there are a number of species, is often a very large and particularly lofty tree, far exceeding the ordinary European tree. It is likewise a very dense evergreen, and this, of course, applies to the Rhododendron tree. Notwithstanding, similar observations applied to sun, will also apply here to shade. In consequence of the great magnitude of the Himalayas, the severe gradients and lofty projection of the mountains, light is practically everywhere most abundant.

These colonies of Lilies are subject to more or less heavy snowfalls annually—some years as much as 10 feet, and occasionally, as in the great snow-year of 1893, I think, not less than 15 feet; and the snow freezes very hard. At the same time it is practically certain frost never reaches the bulbs.

L. polyphyllum flowers in the Himalayas from about the middle of June, or just on the advent of the monsoon as a rule.

I would here draw the cultivator's particular attention to the climatic conditions under which Indian Lilies thrive admirably, and the observations apply to Burmese Liliums in general; also particularly to L. sulphureum.

They are developed right up to flowering time in a warm but dry climate. From March to the monsoon period all through Northern India there is an ever-accumulating state of heat and atmospheric dryness, during which period the rainfall is scanty sometimes extremely so.

The thermometer, even at 7,000 feet, will in June occasionally reach 90° in full shade, though by reason of the dryness of the atmosphere and the delightful Himalayan breezes this temperature is far less objectionable than the same heat in moisture-laden England.

With the arrival of the monsoon a truly stupendous climatic change ensues with marvellous dispatch, and for three months a full subtropical, exceedingly luxuriant growing period ensues, in which vast quantities of rain fall. Vapour dense and prolonged is frequent, temperature is relatively high, and so it continues until about September 15, when all is over, and, generally speaking, about three months of fine dry weather ensue. This should teach the cultivator of Indian and Burmese Lilies the necessity of systematically watering the bulbs up to a corresponding period, and by no means to dry them off or allow them to get dry after flowering for at least two months.

L. polyphyllum, in a state of nature, grows from 2 to 3 feet high on stout self-supporting stems, and each stem will bear from one to three flowers each, borne on the apex of the stem. The flowers consist of three outer segments over ½ inch wide and 4½ inches long; these recurve and finally form loops, as it were, the apex of each segment going quite back to the tube. The three inner segments are 1 inch wide and 4½ inches long, of course, and recurve much less. The base colour is a rich milky white, with numerous minute short streakings of a rich deep vinous red, more particularly along the margins of the segments.

Every segment for more than half its length from base has up the centre of same inside a pronounced green line, and the interior of the tube is suffused with pale green.

It is a delightfully-scented flower, but if any quantity be placed in a room even as large as 35 by 25 feet they develop by night an overpowering scent that is scarcely pleasant by reason of its excessive amount. The bulb of this lily is a very characteristic one, white in colour, small, thin, and pointed, and relatively much longer than wide.

I gather from Mr. Elwes that this Lily is practically extinct in England to-day. I shall be happy to send anyone for *collection purposes* some seed; it is a profuse seeder, germinates readily, and grows freely enough under proper conditions in a rich soil, of which leaf mould should form a large part.

One surprising thing about this distinctly small-bulbed Lily is the great depth it is found in the soil—as much as 15 inches, and 9 to 12 inches always—that the seed got so deep in a wholly virgin place never under the hand of the cultivator is quite impossible; that the bulbs worked down that depth is also extremely unlikely. I therefore arrive at the conviction the depth has been reached by annual increments of soil made by the enormous amount of leafage annually cast off by both Indian Oaks and Rhododendron.

But, even so, it is a very large assumption to suppose that a solid foot of soil has been formed in a century. I suggest that some of these Lilies are indeed much older. The first colony I found was 16 years ago, and it seems to-day just as when I discovered it in a heavy, roadless piece of forest.

In conclusion, it may be mentioned that soil in which these Lilies grow is remarkably first-rate Potato soil, giving an enormous plant, and a fine lot of tubers of the best quality. It is, therefore, a soil rich in both lime and potash, and is most essentially a vegetable soil. *F. W. Sears, Naini Tal, India, U.P.*

PLANT NOTES.

CAMPANULA VERSICOLOR.

CAMPANULAS form some of the most beautiful subjects in the herbaceous border, and among them C. versicolor ✕ deserves special mention. This most charming plant much resembles the well-known C. pyramidalis, both in foliage and in inflorescence. The spikes of large star-like flowers are of a lovely violet-blue shade at their centres, passing to clear sky-blue at the edges, with a delightful Clove scent

This variety does well in a sunny position in deep sandy soil. It will last in flower for a much longer period if given frequent waterings during dry weather.

MULGEDIUM PLUMIERI.

THIS is another delightful plant for the herbaceous border or the rock garden. The foliage is rather large and of a light shade of green. The large panicles of heavenly-blue flowers produce a most charming effect. It is a very ornamental plant, and is one easily propagated. It is raised from seed sown in the open ground in April or in May. They should be planted at a distance of about 1½ feet apart, in sandy soil, where they will need no other treatment than a liberal supply of water. *W. F. Glover, Langport, Somerset.*

PEACH CULTURE.

OUT OF DOORS.

There is no denying the fact that the Peach and Nectarine are not cultivated out of doors in gardens throughout Great Britain and Ireland to anything like the extent that they deserve to be.

In reply to questions I have put to the owners of walled-in gardens and those in charge of them as to why Peach and Nectarine trees were not grown therein, I have been told that they had been tried, but that they did not grow satisfactorily; that the trees became a prey to the attacks of aphides and red-spider during the spring and summer months, adding that they did not think the climatical conditions in that particular district were favourable to the successful cultivation of the Peach and Nectarine out of doors.

Regarding aphides and red-spider attacking the foliage of the trees in the spring and summer months, I may say that the attacks of the former may be easily repressed, and those of the latter prevented if taken in hand in due time, while the question of suitability or non-suitability of climate in such cases cannot be considered seriously by any practical fruit-growers. Indeed, as one who has practised the cultivation of the Peach out of doors in various parts of the United Kingdom (extensively in the south-west of England), and at the same time studied and noted the results—good and bad—attending the methods of procedure followed by others, I have no hesitation whatever in saying that, in my opinion, Peaches may be successfully grown at the foot of and trained up against walls facing south, south-west, and west in any garden in Great Britain and Ireland in which Sweet Cherries, Pears, and Plums succeed. But the trees must be given proper attention in the way of training, disbudding, laying-in of the young growths retained for bearing fruit the following year, and keeping of the foliage free from the attacks of aphides and red-spider, and, of course, the protecting of the expanded blossoms from the effects of spring frosts. I may here remark that, in addition to the cultivator possessing the necessary knowledge of requirements of the Peach and cultural details connected therewith, he should be sufficiently well-manned to enable him to have the work done properly and at the right time.

In making a beginning in the cultivation of Peach trees out of doors the first thing to be done is to determine the sites and the number of trees to be planted thereon of the Peach and Nectarine, and then to select the varieties of each kind, and send the list to some nurseryman having a reputation for supplying good, kindly-growing trees, true to name, ordering good-sized, well-conditioned, dwarf-trained trees to be despatched at the correct time. But in making the list of varieties of the Peach and Nectarine due regard should be paid to the locality in which the trees are to be grown, as, for instance, in admittedly late districts it would be advisable to only plant early and mid-season varieties, such as: Peaches—Early Alexander, Waterloo, Amsden June, Hale's Early, Dagmar, Early Grosse Mignonne, Goshawk, Violette Hâtive, and Crimson Galande (Nectarines, Early Rivers, Lord Napier, Elruge, and Humboldt. For growing in the southern and western counties of Great Britain and Ireland the following varieties should (where wall space is available) be added to those already mentioned: Peaches—Dymond, Golden Eagle, Princess of Wales, Thames Bank, Sea Eagle, and Walburton Admirable; Nectarines—Dryden, Newton, Pine Apple, and Spenser.

Whilst awaiting the arrival of the trees from the nursery, the preparation of the holes for their reception should be proceeded with. Mark the central position of each tree on the wall at from 12 to 15 feet apart with a piece of chalk or charcoal, marking at the same time 2½ feet on either side the central mark, and the same distance therefrom outward, indicating the position in the border with a stick. This, when marked out with a piece of string and stick, will give a semi-circular hole space of 5 feet, and should be excavated to the depth of, say, 2 feet, 3 inches, putting the top spit on one side and the bottom on the other in the process of excavation. Then put about 6 inches deep of brickbats or clinkers, broken fine, on the top in each hole for drainage, but should these materials not be available, stones, with a barrowful of coarse gravel placed on top to fill in the chinks will answer the purpose equally well. Cover these with thin turves, grassy-side down, or stable litter to prevent the soil getting into and choking the drainage.

This done, the question of suitability of soil calls for consideration on the part of the cultivator. However, I may say in passing that the Peach tree is not so particular as to soil as many people assume it to be. That the Peach tree planted in deep, calcareous loamy soil of average fertility will be capable of flourishing and producing heavy crops of first-rate Peaches year after year, without being subjected to any preparation in the way of manuring and trenching the ground prior to planting, I know to be a fact. It is also quite true that good crops can and are being secured from trees planted in ordinary garden or field soil, enriched with a good dressing of well-decomposed stable manure in the process of trenching about 2 feet deep (more or less according to the natural depth of soil), or digging. Of course it is undesirable that the roots of the trees should be submerged during the late autumn or winter months, or, indeed, at any time. Experience goes to show that, heretofore, much unnecessary expense has been incurred in the making of Peach and Vine borders and in the preparation of the composts to place therein. However, where the natural soil is either too light or too heavy in texture to promote and maintain a free, healthy, and fruitful growth in Peach trees, holes must necessarily be made as indicated above, and the excavated soil be replaced with a compost consisting of the best available ingredients at hand, such as turfy loam taken from some remote part of the park or down, broken up with a spade or digging fork. Road-side parings may also be used in this connection with good effect. The loam may be used either by itself or with additions of old lime rubble, wood ashes, and horse droppings, at the rate of one cart load of each to five loads of loam, the whole being well mixed together before being deposited in the holes, leaving sufficient space in each hole to admit of 6 inches deep of soil being placed over the evenly-arranged roots, which should be made to slope gently downwards from the centre when planting; the trees should be put at the same depth in the soil as they were previously, but allowing about 3 inches for the loose soil settling down to that extent within a few weeks from the time of planting. This done, lay on surface dressing of short manure and afford sufficient water to settle the soil about the roots. Secure the branches loosely to the wall until the soil has subsided, afterwards arranging them in their proper positions in due time.

Disbudding—that is, rubbing off superfluous young growths—must not be done at one time: on the contrary, the operation should be extended over several days, doing a little at a time, in order to prevent the trees experiencing any check in the flow of sap. The buds when about one-quarter inch in length should be thinned out to about three or four inches apart on each side of the individual shoots, rubbing off all growths on the upper and lower surfaces of the shoots; those proceeding from the sides of last year's growths being selected at proper distances from one another from the base of each growth for bearing fruit next year.

The attacks of aphides must be looked for as soon as the woodbuds begin a push into growth, and the most effectual way to combat this pest is to syringe the trees with a solution of tobacco juice and water, used in the proportion of one quart of the former to four gallons of the latter, this being applied to the trees after the sun has ceased to shine on them in the afternoon. As a rule one syringing with the solution, if done in time, will suffice for the season. Red-spider may be prevented by washing the foliage thoroughly with clean water applied from a hose, garden engine, or syringe every afternoon, during hot, sunny days, from the middle of May to the end of August. The soil about the roots of the trees should also be kept uniformly moist in this connection as well as for the general well-being of the trees. Thinning out the fruits to about one foot apart is an operation that should be performed as soon as they have attained to the size of large Peas, and not deferred, as is generally the case, until the fruit has stoned, thereby needlessly wasting the forces of the trees. *H. W. Ward.*

THE ROSARY.

THE ROSE GARDEN AT THE MANSE, BRACEBRIDGE, LINCOLN.

A visit to the Rev. C. C. Ellison's garden furnishes at all seasons of the year a source of interest and instruction to those who love a garden, and especially to those who may be more particularly interested in the growth of hardy fruit and Roses. Mr. Ellison is one of the few veterans left of that band of enthusiastic amateur and professional men who made the growth of fruit a special study some forty or more years ago. His contemporaries and friends of that time included the late Dr. Hogg, Mr. Pearson of Chilwell, Speed of Chatsworth, and many others who could be named. Few of those privileged to take part in the activities of those days have been spared to witness the great development which has taken place in the fruit industry of this country since then. But Mr. Ellison works as hard, and enjoys as keenly the delights of his garden now as he did in those early days.

The Rose has claimed him as a devotee as long as have his fruit trees. He dates his love for the Rose back to his early association, and afterwards a long life's friendship, with the late Dean of Rochester. Time has deepened that love, and now, in the evening of his busy life, its culture and the enjoyment of its blooms is a never-failing source of delight and pleasure to himself and his many friends. Five minutes had not elapsed after my arrival at the Manse before we were out amongst the Roses. The first colour mass to arrest one's notice was a magnificent specimen of the Crimson Rambler. It was planted a good many years ago in a corner at the junction of two high walls, both of which it had covered, forming, as it were, a giant cross of glorious crimson colouring. Turning shortly to the right is a wall forming a boundary between the pleasure ground and the fruit garden. On the right of this walk Roses are everywhere in evidence in standards, climbers, and bushes; but this is not the Rose garden. Facing us at the end of this walk is a high screen, formed of strong Oak branches, all completely covered with climbing Roses and summer Clematis in glorious bloom. This is the introduction into the Rose garden, and through a gateway in the screen we gain admittance.

Rose Garden in Compartments.

But before going any further, I ought to say that this garden generally is arranged in compartments or divisions, each complete in itself, forming a garden in itself, in very much the same way as the delightful gardens of the Prince of Monaco at Monte Carlo are arranged only, on the Riviera the hedges are composed of Box, whilst at the Manse the familiar English Hawthorn has to do duty instead. This compart-

ment-arrangement of gardens has much to recommend it, especially in gardens of small or moderate extent. It adds variety and interest to a garden, and helps to focus its contents for pleasurable inspection more effectively than when a great vista, and only that, is exposed to view at one time. The first compartment entered (enclosed within tall hedges) was planted with about 800 well-established strong Roses in magnificent bloom, consisting of Pillar and Standard Roses at the back, with dwarf bushes filling the body of the garden—the whole edged with dwarf Polyantha Roses, the best of them being Gloire des Polyanthas. In planting Roses, Mr. Ellison has originated, or followed, the excellent plan of planting them in groups of three to five plants, and sometimes more of one variety, selecting those colours which in close association with others will produce the most perfect and beautiful effect as a whole. The effect of this method of planting is more pleasing and effective than is the common practice of planting in straight rows with single plants, alternating with other colours in the rows. Certainly the sight, on first entering this garden, will long be remembered, planted, as it was, with the very cream of the best hybrid perpetuals, hybrid Teas, and Teas, all in glorious bloom. Reluctantly leaving this feast of Roses, another gateway in the high hedge brings us to another garden of Roses, similar in many respects to the one we have left, but the colours are differently arranged, and a greater proportion of hybrid Teas planted. No sooner have we left this division and turned a sharp corner of the great hedge, than an entirely different scene comes in view—not a scheme of colour in Roses this time (excepting that we have a glimpse in the near distance of the main Rose garden). The compartment opening to us now is a beautifully planted and furnished water garden, consisting of a circular pond with an elegantly-designed fountain in the centre—the spray from which in the heat of the day, and the shade of the trees which margined the water, gave this garden, after the brilliancy of the Roses, a sense of refreshing repose. The pond is planted with a selection of the best varieties of Marliac's hybrid Water Lilies, and its banks by a choice collection of Reeds and bog-loving plants. Moving to the right by a winding path through a shrubbery, and by the side of a beautiful wide Box hedge planted in serpentine form, the beauty and glory of the real Rose garden is suddenly revealed—and what a galaxy of glorious colouring! This garden is formed like a miniature valley, the sides gently rising away from the centre on each side to a back-ground on the right of the serpentine hedge previously mentioned, and beyond it by a bank of choice flowering and ornamental trees and shrubs. On the left it is bounded by a giant Yew hedge, at the end of which arches of Crimson Rambler Roses are planted, illuminating at the time of our visit the grand old hedge with its beautiful brilliant colouring at this point. At the top of the garden an artistic summer house is placed, from which a delightful general view is to be had of the Rose and the water garden below. This ground in the first instance was only a piece of ordinary level garden land, and its present aspect goes to illustrate the great possibilities which exist, even in small gardens, of producing some very interesting and beautiful effects by a trained and artistic mind. It was the soil and material excavated from the lake which formed the elevations and the possibilities of effect to this garden which Mr. Ellison has so cleverly taken advantage of.

The same principle of arrangement is followed in planting here as in the other divisions, but this portion of the Rose garden being so much larger and the contour of the ground so varied, with the addition of the imposing and splendid background previously mentioned, the effect of the bold colour massing is enhanced. There was only one feature near this garden which seemed to mar the beauty of the whole. It was a wooden framework placed in one corner and covered with tiffany. One was inclined to condemn the introduction of such a feature on to so beautiful a scene, until we approached it near enough to see that Mr. Ellison's solicitude for the welfare of his pet dark Roses was the reason for the insistence of this shading contrivance. I know that a certain amount of shade is essential to the successful growth of dark Roses, as they will not stand for long the hot glare of the sun, but I think that their growth and protection together should be removed to a less beautiful and conspicuous position than this.

NO APHIS, LITTLE MILDEW.

No less remarkable was the healthy and clean appearance of the foliage of the Roses generally than was the great abundance of bloom. Not a trace of green fly was to be seen, and amongst the nearly four thousand plants grown traces of mildew were only seen on about half a dozen plants. The hose and water hydrant to be found at every corner of the garden may in some measure account for this, but I think it is accounted for more fully by the fact that Mr. Ellison eschews those varieties which are known to be weak and poor growers. It is the same with new Roses; they must be well tested before they have the entry into his garden, but once their merits have been proved no one welcomes them with greater cordiality, and only in one case within recent years has he been disappointed, and that has been with Bessie Brown. He is inclined to let her down gently, being a lady; otherwise, I fear to think how her intrusion would have been characterised. The remarkable health of the Teas and hybrid Teas Mr. Ellison attributes to the fact that every winter they are earthed-up to the extent of six or seven inches up their branches with fine, light soil. They are frequently cut down by frost to the top of the soil, but seldom or ever below, and from the growths thus saved splendid plants, many of them two to three feet through, result the following summer. In other divisions of this wonderful garden we came across many old Apple trees given over to climbing Roses, Honeysuckles, and Clematis; many of these they had completely clothed to the height of from 12 to 18 feet, and were at the time of our visit a mass of lovely blossom. Another surprise in store at the turn of a corner was a long pergola clothed with all the best standard climbing Roses, Jasmines, Wistarias, Clematis in variety, Golden Hop, and a host of other beautiful climbing plants in flower.

(To be continued.)

The Week's Work.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire

Ripe Grapes.—Varieties such as Black Hambro', Madresfield Court, and Foster's Seedling will not remain for any period in a good condition after they are fully ripened, but by careful management their season can be somewhat prolonged. During hot weather the ventilators of the glass-house should be thrown wide open all through the day, and a fair amount of ventilation should be allowed all through the night time, to ensure a free circulation of air. Avoid artificial heat as much as possible, for it tends to shrivel the Grapes. Should wet weather set in, a small amount of heat should be allowed to circulate through the pipes, in order to keep the house dry and the berries free from damping. The roof glass should be shaded with thin lime-wash, to break the strong rays of the sun, or the colour in the berries would soon be gone. Examine the bunches frequently, and cut out all cracked and decayed berries, for if these are allowed to remain, sound berries will also soon be affected. The bunches should also be protected from the ravages of wasps and flies. Wasp-proof netting should be hung over the ventilators, but care must be taken in arranging it to allow sufficient space for the ventilators to be opened their widest. This method of protection is a far better system than that of enclosing each bunch in a separate muslin bag, for these do not allow the air to reach the bunches sufficiently, when, consequently, decay soon sets in. Judgment must be exercised in regard to the state of the borders—they must not be allowed to become too dry or shrivelling of the fruits will soon take place; neither must they be kept in a sodden state, or the Grapes will be insipid. Watering should be done very early in the day, so that the surface moisture may disappear before night time. The lateral growth may, if necessary, be cut back a little to allow of a free circulation of air between the foliage and the glass.

Early Pot Vines.—In some establishments Grapes are required very early in the season, rendering the cultivation of pot vines necessary. Every endeavour should be made to have the wood thoroughly ripened, therefore the canes should be fully exposed to sun, light, and air. A somewhat sheltered position outside and one facing south should be chosen for them to ripen, and in such a spot the leaves will not become battered and torn about by the wind. The pots should be partially plunged in ashes, which will save much labour in watering them, for they will not dry out so quickly as otherwise. Weak liquid manure water will greatly strengthen the "eyes" if applied once a week.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Francisceas.—In all stages of their growth these plants should be shaded from the direct rays of the sun, otherwise the colour of both flowers and leaves will suffer. The practice of moving these plants to cooler quarters at the time of opening their flowers is not a safe practice after this date. Afford ventilation to any plants that have passed out of flower, and maintain a summer temperature in the plant house in which they are growing until the middle of September, when it should be gradually decreased until it reaches 55°, at which degree it must be maintained during the winter months. The three points essential to the successful culture of Francisceas are—(1) to keep them liberally supplied with water (soft or rain water should always be used); (2) to train the shoots sufficiently far apart to allow them room for their proper development; and (3) to pinch out the growing points of the shoots in order to encourage the lower branches to develop. Young stock plants raised recently from cuttings should now be re-potted into 5-inch or 6-inch pots. I find a little peat mixed with loam and sand promotes a rich, healthy colour in the leaves.

Plumbago rosea.—The growths of these useful winter flowering plants should be allowed to extend; do not, however, force them into excessive growth by subjecting them to a close, moist atmosphere, but rather grow them under cooler and more airy conditions, which will ensure their flowering profusely during the winter months. Thrips are the most troublesome insects affecting these plants, and these are most easily destroyed by light fumigations. Any plants which have filled their pots with roots should receive occasional waterings of weak liquid manure and soot water. A slight top-dressing of dried fowl manure, passed through a fine sieve, will materially assist them into growth.

Nerium Oleander.—These may now be propagated from cuttings of half-ripened shoots that have shown no sign of flowering. The cuttings should be made with a slanting cut at the base, and should be inserted in thumb pots, filled with very sandy soil. Press the compost very firmly about the cuttings. A moderate bottom heat in a close frame should be afforded them, and when rooted they should be potted and gradually hardened to withstand greenhouse treatment. To ensure success in flowering, plenty of sunshine and ventilation should be allowed them. Soon after the trusses of flowers appear, young growths start from the base of the shoots, and if these are allowed to remain, the flowers are weakened.

Earwigs and Chrysanthemums.—These insects are now in evidence on the young shoots of

Chrysanthemums, and they must be hunted down. Place for them hiding places, where they may conceal themselves at the approach of day. These may be formed of a hollow broad bean stalk, a short piece of bamboo cane, or an inverted flower pot filled with a little dry hay or moss.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Winter Vegetables.—The soil should be well stirred from time to time, both between the plants and in the rows of crops intended for a winter supply. In many parts of the south of England Broccoli and Winter Kale have made poor growth in consequence of the drought, and especially in those gardens in which the soil is stiff and clayey, rendering it hard to work. In wind-swept districts slightly earthing the stems will help to steady the plants.

Turnips.—A large breadth of Turnips should now be sown on a piece of well-cultivated ground, with a view to a continuous supply throughout the winter. Sow for the purpose varieties such as Snowball, Orange Jelly, and Chirk Castle. Thin the seedlings early and before they become "leggy."

Globe Artichokes.—The heads should be cut at the proper time and when they are comparatively young. In this dry season earwigs have been a source of trouble, rendering the heads comparatively useless for table purposes in consequence of their deposits. It is difficult to catch all the earwigs, but trapping must be persisted in by means of hollow bean stalks, &c., and in addition pieces of cotton wool should be tied near to the top of the stems, and immediately under the cotton wool the stalks should be smeared with treacle to prevent the pests from reaching the "heads." This should, of course, be done when the inflorescences are quite young, and also when clear of the foliage. Decaying stems should be cut clean away, and the plants be encouraged to make as much growth as possible.

Beet.—Should any of the roots become over large, and promise to deteriorate before the usual time of storing, there need be no hesitation in pulling them. Lift them with care and lay them in soil behind a shady wall, where they will remain fit for use for a considerable period.

Lettuce.—Another large batch of these should be sown to furnish the winter's supply. Grow them from the beginning without a check, and they will then remain a longer period fit for use when matured. All the Year Round is one of the best varieties for sowing now, in fact it is one of the best cabbage varieties for any season of the year.

Winter Tomatos.—Plants newly potted in their final pots, and stood for the present in the open, will require watching to see that they are not saturated by severe rainstorms. The better plan will be to place the plants in frames where the lights can be drawn over them in stormy weather.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Vandas.—Orchid collectors inform us that Vanda teres is, in its native habitat in Assam and Burmah, always found in the most exposed and hottest places. Under artificial cultivation it has by experience also been found that to flower this plant satisfactorily it requires exceptional treatment in the matters of light and of sun heat, and where a number of plants are grown and a separate compartment can be conveniently set apart for them, the plants need no shading, provided ample ventilation and atmospheric moisture be afforded. The plants are now growing freely, and some of the stems may have become too tall; these may now be cut off at about 2 feet or 3 feet from the top, and rooted. Insert them in well-drained beds of sphagnum-moss, tying each stem firmly to strong neat stakes, or, if more convenient, plant eight or ten stems in a 7-inch pot in the same manner as that advised in last week's Calendar for Gomesa laxiflora. Another good plan is to tie half-a-dozen or more stems to long, upright, teak rafts, each raft consisting of three or four rods. The lower part of the raft and part of the stem may then be inserted in a pot and made secure with crocks, over which place a layer of fresh sphagnum-moss. Keep the cuttings lightly shaded. Tie all the points of the roots as they form close in to the raft, to which they will soon adhere, and when they have taken a firm hold of the wood they may be gradually exposed to direct sunlight. If no special accommodation for these plants exists, the next best place for them is a sunny corner of the Mexican or the Cattleya house. They should be well syringed overhead several times a day during fine weather, but on dull, chilly days less moisture must be given. The lower stems, from which the tops have been severed, will, if encouraged by heat and moisture, soon produce fresh growths, and in this way the plant may be further propagated. The allied species, V. Hookeriana, the distinct hybrids, V. Agnes Joaquim and V. Marguerite Maron, should also be grown in a sunny position in the hottest house, and be treated exactly as advised for V. teres. The stems may be severed and replanted immediately the flowers fade, which will be about the beginning of September. Stems which have failed to flower may be treated at once. V. Kimballiana and V. Amesiana may be grown in the Mexican house. They require a free circulation of air about them, but neither species care for overhead syringing, and the water, lodging in the axils of the leaves, frequently causes them to become spotted. V. Amesiana should be kept rather more dry at the roots than its allied species, especially during autumn and winter. V. cærulea is generally found a difficult subject to grow for any lengthened time. In many cases the plant is kept in a close, moist atmosphere, whereas it requires an abundance of fresh air at all times, and even during the night time the ventilators nearest the plants should be open more or less, according to the weather outside. Now that the plants are showing their flowering spikes, they need plenty of water, and a light spraying overhead after a hot day will help them considerably. The plants may either be suspended well up to the roof ventilators in the intermediate house, or they may be stood on the side stages in a position that receives plenty of light and fresh air. The same cultural remarks also apply to such hybrids as V. Charlesworthii, V. Moorei, and V. amœna, each of which has V. cærulea for one of its parents.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Early Pears.—Very early varieties are, this season, ten days late. Doyenné d'Été and Citron des Carmes are the two earliest kinds, but the latter is a very indifferent Pear at its best, and requires to be eaten directly it is gathered, and Doyenné d'Été is little better. The first Pear ripening, with any merit, is Beurré Giffard, and this is now ready for the table. The tree is a somewhat shy bearer when young, but later, providing it is not overcropped at any time, it furnishes a regular supply. It is a handsome fruit having a red cheek next the sun. The flesh is rich, melting, and sugary. It requires using soon after gathering, as it keeps good for a few days only. Jargonelle, on walls, follows this variety. The fruits may be hastened into condition by gathering them and placing them in a box in a warm place, such as over hot-water pipes or on a sunny shelf. The tree is a strong grower, and very prolific, in consequence of which the fruits require much thinning. Beurré de L'Assomption is a splendid early Pear, very rich in flavour and with a musky perfume, being preferred by some to William's Bon Chrétien. It is very free in growing and cropping. Trees of early fruiting varieties should be well supplied with water. Make secure by tying or nailing all long growths retained for extension, but if the trees have filled their allotted space, pinch or cut the laterals back to one leaf. Moincrop and late varieties should not be allowed to suffer from lack of water at their roots. Where possible, the trees should be well syringed with the hose pipe during the long, hot evenings, for this will cleanse the foliage and water the roots at the same time.

Plum Trees.—The growths should be nailed and tied, and unnecessary ones pinched again as this all helps the fruits to develop. The trees should be kept clean by frequent washings, which will also help to keep the roots moist especially where a heavy mulching has been placed over them. Late Plums should be more severely thinned than early ones. Such first-class varieties as Transparent Gage, Jefferson's Gage, Coe's Golden Drop, Green Gage, Kirke's Seedling, and Peach Plum need heavy thinning, high feeding, and careful stopping and pruning. Kitchen Plums are also better when the fruits and growths are properly thinned and regulated. Large fruits are very serviceable for bottling. Remove all suckers from the stems, and keep the foliage free from insect pests.

Late Cherries.—The trees must be kept clean by frequent washings, and be netted to keep away birds. Morello Cherries can be kept for a long time when carefully protected, but during a very hot season they will also need protection from wasps, and this can only be done with very fine meshed netting; late varieties, however, are usually grown on north walls, where these pests are not so troublesome as on warmer situations.

THE APIARY.

By Curtis.

Re-queening.—This is a suitable season of the year at which to re-queen. Were a good farmer about to re-stock or provide a good male of any kind, he would desire one of good pedigree; but in beekeeping many ignore pedigree, and are quite ready to take any queen, irrespective of its descent, whilst others simply introduce foreign races without knowing their peculiarities.

Carniolans are very quiet bees to handle, and very prolific. They cap their honey almost as well as the native bee, the cappings being white; but they are given to excessive swarming, and on this account many beekeepers have ceased to keep them. There are some good strains which have been produced by careful selection.

Cyprians are very pretty bees, and many stories of large crops of honey taken from them are recorded. They are very excitable and difficult to handle, consequently they should never be disturbed unless the operator wears a veil, and the smoker should be fully ready. Another race of like temper is the Syrian.

Ligurians or Italians are easily distinguished by the three yellow bands around their abdomen. They are very prolific, and during the spring breeding goes on by leaps and bounds. When the honey season arrives they seem to curb their excessive breeding, and this gives place to honey collecting and storing. They are a quieter race than the other foreign kinds mentioned, and whilst many of the other kinds take to the wing when the frames are raised during an examination of the hive, these remain on the combs. They possess a long tongue, and they can gather deep-seated honey which could not be reached by the native bee. They are, generally speaking, admirably suited to the production of extracted honey.

The native bee produces better-sealed sections than any other race, for many of the others fill the cells very full of honey and seal them with a thin capping, which gives the sections a watery look.

In choosing a queen there are many points to be considered. Temper is an important trait, and, as a rule, hybrids seem to inherit all the bad qualities of both races from which they are raised. Some imagine a prolific queen is a great desideratum, but of what use is this if, combined with it is the undesirable habit of excessive swarming? Other points to consider are the disposition to build brace combs, and bad capping, which, if of a watery appearance, detracts greatly from the value of the sections and loses points on the show bench.

We should look to our apiaries to discover whether we may not, with advantage, utilise our own stocks for the purpose of re-queening. The beekeeper who has kept a correct record of the doings of each stock can destroy the queen of a desirable strong colony, and the bees will at once set to work to raise other queens. In about a week the queens that are to be replaced may be removed, and these stocks will also set to work to produce other queens. When they have been queenless for about four or five days, the queen cells may be removed, and other queen cells taken from the first hive may be secured very carefully on the frames. The young queens will hatch in 14 days from the removal of the first queen, and will probably be laying in a week or ten days.

The best queens are always raised from stocks that are at the swarming point. Weak colonies are useless for the work of producing desirable queens.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Aug. 21	Brighton Fl. Sh. (2 days).
WEDNESDAY,	Aug. 22	Harpenden Hort. Sh. Shropshire Hort. Soc. Sh. at Shrewsbury (2 days).
THURSDAY,	Aug. 23	Aberdare Fl. Sh.
FRIDAY,	Aug. 24	Devon & Exeter Fl. Sh.
SATURDAY,	Aug. 25	Dutch Gardeners' Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—61.5°

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, August* 15 (6 P.M.): Max. 71°; Min. 58.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, August* 16 (10 A.M.): Bar., 30.0; Temp., 67°; Weather—Fine.

PROVINCES.—*Wednesday, August* 15 (6 P.M.): Max. 65° Norwich; Min. 55° West Coast of Ireland.

SALES.

MONDAY—
5,000 lots of Dutch Bulbs, also Lilium longiflorum, L. Harrisii, Palms, Seeds, &c., at Protheroe & Morris' Rooms, at 10.

WEDNESDAY
Dutch Bulbs at Protheroe & Morris' Rooms, at 10.

THURSDAY—
Dutch Bulbs at Protheroe & Morris' Rooms, at 10.

The Royal Botanic.

The affairs of the Royal Botanic Society ought to have an interest for the horticultural community. That they possess it in so slight a degree appears to us to be due to the exclusive policy so long pursued by the management. These are democratic days, and this is a period when a Society, of whatever nature, has to justify its existence or be crowded out. We are afraid the warmest friend of the Society must admit that its right to the title of "Botanic" is but feeble, and that its claim to be a representative of Horticulture is not much (if any) more valid. Half a century ago botanical students used to wonder what the Society did to act up to its title, and they are still wondering. They are wondering, too, how the Royal Horticultural Society, which at one time stood sorely in need of assistance, received no encouragement from the Government, although it had done so much, whilst the sister Society, whose claims to public help were so greatly inferior, received favourable consideration. The gardens in the Regent's Park are well known for their beauty, and they contain, and always have contained, an interesting collection of plants. They have been useful in furnishing specimens for generations of botanical students. In their present condition they confer much credit on the able superintendent, Mr. Hawes, and yet we hear little but of dissensions among the Fellows, of heavy debt, of expenditure exceeding income, and of relatively a very small number of additional Fellows.

The precise causes of these depressing conditions we can only guess at. The Society has been so out of touch with horticulturists that very few of them have sufficient first-hand acquaintance with the affairs of the Society to enable them to offer an opinion, even it were asked for, and, worse still, they have little interest in the matter. It seems to us that the Society has relied much too exclusively on exhibitions, garden-parties and similar distractions. These things, of course, have their value, and are not to be despised, especially from a commercial point of view, but they do not appeal to those who have the advancement of horticulture and botany at heart.

Reforms have been from time to time proposed, the precise value of which we are not able to estimate, but, at any rate, they have not hitherto commended themselves to the Council, or to the Fellows assembled in general meeting. At the annual meeting held on the 10th inst., a proposal was made that five members of the existing Council should retire and be replaced by others, but this proposal was negatived by a large majority.

The total income was declared to be about £380 less than in the previous year, but it was pointed out that the excess of expenditure over income was "only" £975 as against £1,237 in the previous year. Some new bye-laws giving the Fellows more control were proposed, but the rule of a qualified, intelligent and benevolent Dictator would seem to be the greatest want of the Society in its present state.

SUPPLEMENTARY ILLUSTRATION—YUCCAS. Among the most effective plants that can be used in the decoration of the garden or the lawn, certainly the Yuccas take a foremost place. There are many species and varieties, but on the whole there is none superior to Y. gloriosa. Its hard, rigid leaves, alike on both surfaces, and therefore provided with a double breathing apparatus, enable it to withstand even the more or less mephitic atmosphere of our great cities. Most of the species are quite hardy, and although some over-careful gardeners tie up the leaves into a mass during the winter, we have generally found that much more harm has accrued from the accumulation of moisture in the centre of the crown and consequent rotting than from frost, however severe. Yuccas have been flowering freely this year in the vicinity of London, and many a suburban garden has been glorified by the noble panicles of ivory-white flowers. The Viscount HORNCASTLE sends us a photograph of a specimen which has flowered with him this season at Taymouth House, N.E., concerning which he gives the following particulars:—Height, 18 feet 6 inches; flowering panicles, three, densely covered with blossom—and this well within three miles from Cheapside! The species were monographed in our columns by Mr. BAKER in 1870. Yucca filamentosa and Y. flaccida are the species most usually seen after Y. gloriosa. They are mostly natives of Mexico and the arid countries in its vicinity, where they grow under conditions about as different from those which prevail in a London garden as it is possible to imagine, thus affording another illustration of the circumstance that plants do not always grow under what we should consider the most favourable conditions, but where their competitors will allow them to grow. Our illustration, by Mr. E. J. WALLIS, represents a group of these handsome plants flowering in the Royal Botanic Gardens, Kew.

NATIONAL POTATO SOCIETY.—On Saturday, 11th inst., an inspection of the trials of Potatos conducted at the Cambridge University Farm at Impington, near Histon, was made by some members of this society. The visitors were conducted over the farm by Prof. T. H. MIDDLETON and Mr. H. HENSHAW, under whose directions the trials are being carried out. Notwithstanding the drought, the crops were looking exceptionally well. Trials of seedlings are being conducted by the society on behalf of various raisers.

BANK HOLIDAY AT KEW GARDENS.—A record crowd of 113,131 persons visited these Gardens on August Bank Holiday, this number being about 7,000 greater than the previous highest on record. One of the most popular routes to Kew from London is by steamboat, and although 11 steamers were running, they were not nearly sufficient to bring the numbers who congregated at Chelsea pier. The daily papers sometimes record throngs of people scrambling to get on the London County Council trams at Blackfriars Bridge, but that is nothing compared to the crowds who besieged the electric cars at Kew Bridge on Monday evening.

KEWITES AT CRICKET.—A cricket match arranged between "past and present" Kewites took place last year for the first time. It has been repeated, and this year's match was played on Kew Green, on Wednesday, August 8, when the "past" proved successful, thus reversing last year's result. Scores: Past, 120 (TRIBBLE, 41); Present, 77 (BOWELL, 38). For the winners SIMMONS took four wickets for 27 runs, and THOMAS three wickets for one run. On the losing side BOWELL claimed eight wickets for 48 runs. After the match tea was partaken of in the garden library.

LONDON DAHLIA UNION.—The annual show of the above society will be held on September 18 and 19, in the gardens of the Royal Botanic Society, Regent's Park. The exhibition will be held in the large conservatory and long corridor. An additional attraction will be found in the entire range of greenhouses and hot-houses containing the Victoria Water Lily, Bananas, Sugar, Tea, Coffee, and other economic plants. Moreover, the whole of the gardens will be open to visitors to the Dahlia show. The schedule and all particulars can be procured from the secretary, Miss DEAN, 18, Ranelagh Road, Ealing, W.

BEECH TREES AND LIGHTNING.—The question as to whether Beech trees are liable to be struck by lightning is at present arousing considerable discussion. We note a reference to the subject in the *Museum Gazette*, a somewhat new journal published at the Haslemere Educational Museum and in London. In an answer to a correspondent one of the editors (perhaps Dr. JONATHAN HUTCHINSON), says that "the statistics collected by M. FLAMMARION showed that the Beech was as much liable as the Ash. His numbers were 54 Oaks, 21 Poplars, 14 Elms, 11 Walnuts, 10 Firs, 7 Willows, 6 Pines, 6 Ashes, 6 Beeches, and a few of a great variety of others. These statements applied to France, and very much depends upon the relative abundance of any given tree in the locality. Not improbably Mr. HARVIE BROWN (who has asked if Beeches are ever struck, and suggested that they are not) has never known Walnut struck, for Walnuts are far less common in England than in France. At Haslemere we have but few records of Beeches being struck, but then large Beeches are not common, and are very usually protected by other adjacent trees, which, towering much higher, serve as lightning conductors. The Birch is not mentioned once in M. FLAMMARION's list, but very possibly there were few or none of large size in the districts concerned. It is certain," concludes our writer, "that Beeches are not immune, and when struck are usually splintered."

Chatsworth. — Mr. Jennings, foreman at Rangemore, and son of Mr. Jennings, of Ascott gardens, has been appointed at Chatsworth, in place of Mr. W. Chester.

Intermediate Science Examination.—Miss E. M. Hemsley, the daughter of our correspondent Mr. A. Hemsley, was among the successful candidates at the recent examination at the University of London.

What Science has Developed. — Seed growing has had its new birth as well as other operations in the arts and sciences—a new birth noticeable to every one in improved implements and tools, all great labour-savers, but best illustrated by noting the development along scientific lines, as for example:—(1) The use by seedsmen of carbon-bisulphide and hydrocyanic acid gas in killing the weevil in seeds; also in killing under-surface insects and grubs; (2) In spraying garden plants to stop on the one hand insect ravages, and, on the other hand, to stop the extension of fungous diseases; (3) The use of electric light as introduced in France to force a night-time growth of vegetables cultivated in forcing houses, a growth equal to 10 per cent. additional development and precocity; (4) The practice of nitroculture in connection with plants of the Leguminosæ family, an inoculation with commercially-made cultures of nitrogen-fixing bacteria, much advancing the immediate development of Peas and Beans and laying up a store of stimulating food for succeeding crops; (5) The artificial passage of electric currents by some German experimenters through the length and breadth of plant beds in vegetable forcing houses for the purpose of stimulating increased cellular action, equal, it is said, to 10 per cent. development; (6) The use of chloroform to produce an intense rest which makes it quite possible subsequently by the application of moisture and heat to gain 60 days advancement in the blooming of flowering and fruit plants; (7) The use of electric air currents to stimulate the growth of garden and field crops, a gain of 20 to 60 per cent.; (8) The electrocution of insects feeding upon vines and plants both on their above and underground surfaces, particularly applicable in the case of Grapes, Roses, and fruit trees; (9) And among the latest scientific developments in connection with agriculture is the extraction and holding by mechanical and chemical means of atmospheric nitrogen, and its subsequent incorporations with other things in the making of a commercial fertiliser, the air offering a limitless mine out of which to collect the most important of all plant stimulants. This generalisation indicates that the higher practice of agriculture and horticulture, of which the seed grower is the first exponent, has already become one of the sciences. *Florists' Exchange.*

Nitrates from a Fresh Source.—According to a paragraph in a recent issue of *Le Jardin*, MM. Muntz and Laine have recently reported to the Académie des Sciences the discovery of a new source of nitrates. When peat is mixed with lime and then sprinkled with nitrifying ferments it very soon forms into large blocks of excellent chemical manure. This discovery entirely justifies the opinion of those agriculturists who propose to enrich peaty soils and field soils too rich in humus with calcareous matter or with chalk so as to increase its fertility. But there is a yet more important consideration. The experimenters obtained products which yielded 8 kilogrammes of nitrate per cubic metre per day, whereas former experiments only yielded five in two years. To produce this nitrogen the inventors distilled Peat in a current of superheated steam. They thereby obtained not only the whole of the nitrogen but also methylic alcohol, tar, and a combustible gas. They declare that from the Peat-beds of France quantities of nitre can be obtained comparable to the enormous supplies from Chili. Our Irish friends should investigate this matter.

The Legion of Honour.—M. Nanot, the Director of the National School of Horticulture at Versailles, has been promoted to the rank of Officer, and M. Poisson, for many years an assistant in the Herbarium at the "Museum," has been made a Chevalier of the same Order.

Preservation of Fruit.—The Board of Agriculture recommends the plan of immersing the fruit in cold water containing 3 per cent. of trade solution of formalin. Soft fruit are immersed for 10 minutes, then taken out, placed in clean cold water, and afterwards laid out on strainers to dry. At Kew Strawberries, Cherries, Gooseberries, Pears and Grapes were so treated with good results. Apples need only to be immersed for 10 minutes in the formalin solution and then dried, and placed when dry in the fruit-room. The formalin is quite harmless and the expense very little. It acts by preventing the growth of those fungi and bacteria which bring about the rotting of the fruit.

How to Cope with the San Jose Scale.—At the Illinois Agricultural Experiment Station investigations have lately been made with eleven different insecticides to prove which of them is most effectual in checking the San José scale. According to Mr. S. A. Forbes, in Bulletin No. 107, the cheapest and most efficient of the eleven insecticide mixtures thoroughly tested against the San José scale was a simple lime and sulphur mixture (without salt or blue vitriol), dissolved by boiling together. It was prepared from 15 pounds of Marblehead lump lime and an equal weight of sulphur to 50 gallons of water. The sulphur was first put into 12 gallons of water nearly at the boiling point, after being mixed with enough water to form a thin paste. The lime was then added and the mixture was boiled for 40 minutes with the necessary stirring. The whole was strained into a 50-gallon tank, which was then filled with water. The cost for materials was from 84 cents. to 1·03 dollars (3s. 6d. to 4s. 2d.) per hundred gallons of the fluid spray, varying according to the proportions of the chemicals used. Infested trees treated with these solutions in March bore about one-fifth as many scales the following September as companion trees not treated. There was a marked and very important difference in the final effect of these washes and mixtures, dependent upon the time of their application, the mid-winter treatment yielding a result far inferior to that of early spring.

Photographs in Colours.—Mr. T. Waltham has submitted for our inspection some very beautiful photographs, in which the colours of the flowers are brought out with great vividness and accuracy. Some views in the garden at Wisley showing the Lily pond, and some representations of Cattleyas and other Orchids, are excellent illustrations of the progress that has been made. Mr. T. E. Waltham's process of reproducing nature in colours, although differing somewhat from the three-colour process of colour photography, relies upon the negative to give the colour-values of the object to be photographed. The three-colour process, while theoretically perfect, is not yet altogether successful in actual application, the breaking up and subsequent re-blending of the three primary constituents of white light presenting considerable technical difficulties. Mr. Waltham utilizes the camera and its accessories up to the very last stage in his process, but here, at the point at which practice begins as it were to get out of step with optical theory and to lag behind, he substitutes an after treatment of his own devising; this treatment, constituting the finishing stage, is somewhat difficult and tedious at present, but whatever the difficulties to be overcome he guarantees a permanent and faithful representation of the flower or other object entrusted to him to reproduce. Mr. Ernest Waltham's address is 97, Upper Tulse Hill, S.W.

"The Tatur Disees."—His Majesty the King has, we learn, accepted a copy of Mr. Chas. T. Druery's book representing the humorous side of Horticulture, and expressed his pleasure at its receipt. The book is prefaced by the author as follows:—

> "A little nonsense now and then,
> Is relished by the wisest men;
> And even Solomon, no doubt,
> Was not a 'solemn-un' throughout.
> So since a hearty laugh's a tonic
> 'Gainst evils brief and evils chronic,
> The author hopes his quips and cranks
> Will merit even Royal thanks."

The volume is published by the author at Moorgate Station Chambers, E.C.

Mendelian Dominance: a Correction.—Mr. Bateson writes: May I correct a slip in your report of the Hybridisation Conference, on p. 116, col. 3, in the discussion on Mr. Worsley's paper on Hybrid Amaryllids, &c. I am reported to have said that: "It was essential to Mendelian results that there should be dominance." What I said was that it was *not* essential. We know some simple Mendelian cases where there is no dominance of one character, but rather a blending (*e.g.*, the Andalusian fowl, where the two pure types are black and splashed white respectively, while the crossed type is blue). In many examples, also, though the inheritance follows typically Mendelian rules, dominance is by no means complete. There have been such frequent misunderstandings on this matter that it seems desirable to insert a correction. *W. Bateson, August 10, 1906.*

Thefts of Rubber Seedlings in Malaya.—Mr. H. N. Ridley, in the *Agricultural Bulletin of the Straits and Federated Malay Straits*, warns planters to keep an eye on their Rubber nurseries. He says that "The demand for plants and seeds, especially for Dutch territory, is so large that it has become worth while for Malays to raid plantations by night and convey the plants to Singapore, whence they are shipped to Dutch Borneo. Upwards of a thousand seedlings were stolen from the nurseries at the Botanic Gardens in one night, and a planter in Malacca lost 10,000 in three raids. Investigations in Singapore disclosed the fact that a very large export of seedlings has been going on from Singapore, chiefly to Banjermassin, at the rate of from 13,000 to 30,000 a week. Few, if any, of these are cultivated by the exporters, most of whom say they obtained the plants from Klang. One man was recently charged with fraudulent possession of 13,000 plants, but was acquitted as the evidence wanted was in the Native States, and not procurable. It seems probable that the nurseries are raided by night, the plants pulled up and taken by native boats to Singapore, so as to avoid their being seen on board a steamer leaving for Singapore, and they are then sold to the exporters for shipment. At one time it was proposed to prevent the export of Rubber seedlings from the Malay Peninsula, except to British Colonies; it is regrettable that this was not carried into effect, as the supply of plants is by no means large enough for our own requirements, and it would then have been possible to check these robberies."

Useful Fruit-Culture Charts. — In spite of the uncertainty of the fruit crops in these isles, owing to the unpropitious weather frequently experienced at a critical period in spring, the advice to those having gardens or farms to plant fruit trees, on a portion of the ground at least, is as sound as it is general. But if fruit cultivation by the masses be desirable, it is certainly expedient that those entering upon its cultivation should have easy means of obtaining reliable information upon the best manner of carrying out the necessary details. It is from this point of view that we welcome a set of five charts, drawn by Miss Lorna F. Bunyard, which illustrate very clearly the right and wrong methods of carrying

out the operations of (1) Planting; (2) Propagation by cuttings and layers; (3) Pruning; (4) Budding; and (5) Grafting. In the matter of planting, the directions given are of the most orthodox description; a proper hole is to be made for the reception of each tree, and the roots must be laid out at various levels with the utmost care. It is evident, therefore, that the results obtained from experiments made at Ridgmont, and which seemed to show that the best results followed when a young tree was simply stuck into the ground without the exercise of any care whatever, has not yet caused our fruit growers and teachers to modify their practice in the least. We are not surprised that such is the case, believing that there remains much to be disproved before these time-honoured and satisfactory principles of cultivation can be safely discarded. There is nothing new either in the illustrations of propagation by cuttings, of pruning, or of grafting, but such important details cannot be too often taught, and the drawings teach them in a more effective manner than can be done in prose. A small handbook, to amplify the teaching of the illustrations, has been compiled by Mr. GEO. BUNYARD, V.M.H., assisted by the Rev. W. WILKS, M.A., and issued at the price of 6d. each The price of the set of five charts is 5s. net. Both are published by Messrs. W. H. & L. COLLINGRIDGE.

Publications Received.—*Experimental Farms, Ottawa.* Reports for 1905. The harvest was bountiful and the crops gathered very satisfactory over the settled parts of the Dominion. Dr. W. Saunders records a large and increasing demand by farmers of publications issued from the experimental farms and increasing work in all departments.—*The Sports Times*, New York.—*Agricultural Gazette of New South Wales*, May. Contents: Formalin and the Germination of Wheat, D. McAlpine; Forestry, J. H. Maiden; Botanical Work at the Hawkesbury College, C. T. Musson, &c.—*Journal de la Société d'Horticulture du Japon.* With many illustrations and articles in Japanese and in French.—*Country Life in America.* An attractive paper, somewhat on the lines of our British periodical of similar name. It deals with all matters concerning the country, and is well illustrated.

HYBRIDS AND HYBRIDISATION AMONG BULBOUS PLANTS.*

THE following is an enumeration of some of the hybrids among bulbous and tuberous-rooted plants that were raised in my establishment:—

Lilium.—Very numerous crosses among various species were effected by me, and many seedlings are still under observation; a good and noteworthy race has sprung from the crossing of Lilium Martagon album with Lilium Hansoni. It is of particular interest to note, that whereas Lilium Martagon album, if raised from seed, almost comes perfectly true, scarcely ten among a thousand plants reverting to the typical purple Martagon Lily; out of the mingling of Lilium Martagon album with L. Hansoni not a single white Martagon occurred. All plants (several hundreds) that showed no influence of the pollen parent (L. Hansoni) reverted to the typical purple Martagon Lily. Those that showed the influence of L. Hansoni developed into stately, tall-growing Lilies with broad, dark-green foliage in whorls and pyramidal spikes, composed of very numerous flowers. The ground colour of the flowers of these hybrids is a more or less pronounced pale buff-brown, either flushed with crimson or with deep orange and with purple spots. The individual size of the flowers much exceeds that of either parent. I named this strain Lilium mar-han, and, as far as is known to me, the cross effected by Mr. Powell, of Southborough, between L. Martagon dalmaticum and Hansoni either produced true hybrids or gave dalmaticum pure. Other crosses which gave good results were effected between L. pardalinum and Parryi and also between L. pardalinum × Humboldti. These, however, have lately also been raised in America.

Brunsvigia Josephinæ.—This remarkable plant freely flowers with me, and I several times fertilised it with pollen of Amaryllis Belladonna. I have now large bulbs, 4 to 6 inches across, of these hybrids, which so far have not yet flowered, although some are over ten years old. It is very remarkable that the plants, though raised from seed of the Brunsvigia, show no influence of the mother parent, the bulb and foliage being that of an Amaryllis Belladonna.

Colchicum.—Some very interesting plants came from a cross between C. Sibthorpii and the double white-flowered form of Colchicum autumnale. The seedlings either produced a large, broad-petalled form of C. Sibthorpii or gave perfectly double-flowered C. Sibthorpii, the flowers being composed of hundreds of narrow petals of a lilac red, faintly chequered white. These double flowers are perfectly sterile, whereas in the double white-flowered Colchicum autumnale one occasionally finds a good pistil and potent pollen.

Eremurus.—Some very strong-growing hardy hybrids, capable of resisting severe late spring frosts, which will kill or hopelessly damage flower-spikes and foliage of robustus and himalaicus, have been raised by crossing E. himalaicus with early-flowered forms of E. robustus, the result giving a fair percentage of immensely strong growing plants, throwing spikes 7 to 8 feet in height with flowers of a pale-rose colour. These hybrids flower a little later than E. himalaicus and before those of E. robustus are out. Though not so showy as a finely-developed specimen of E. robustus, the hybrid which I named Eremurus him-rob has the particular advantage of being capable of escaping the injurious effects of late spring frosts. A very interesting and delicately beautiful plant is Eremurus × Tubergeni, which was produced by crossing E. himalaicus with pollen of an early-flowered form of E. Bungei. In this plant the foliage has the deep-green colour of that of E. Bungei, but being almost as broad as that of E. himalaicus, while the spikes and individual flowers most resemble those of E. himalaicus, the colour being a delicate pale primrose yellow. Seedlings of this hybrid either produce true E. Tubergeni or E. himalaicus, but I have not observed any E. Bungei to reappear among them. Hybrids between E. Bungei with robustus or Olgæ (the latter were also raised in Sir Michael Foster's garden at Shelford) give plants in which a coppery salmon yellow of the flowers predominates. In habit of growth and colour of the flowers some of the seedlings cannot be distinguished from E. Warei, which I have always regarded to be a natural hybrid between E. Bungei and some rosy-coloured sort and not a true species.

Freesias.—Up to very lately these charming plants only occurred in white and creamy yellow shades, and though yearly raised by the million from seed in France and Italy, seem to have sported very little. Crosses between the small flowered orange-yellow F. aurea and refracta gave interesting hybrids, but not an improvement on either parents. The advent of the rosy-crimson flowered F. Armstrongi from South Africa has been a most welcome addition, as this at once opened a wide field for bringing some more variations of colour among these popular flowers. F. Armstrongi itself being a rather delicate grower, I made no attempt to fertilise it with pollen of refracta alba or Leichtlini, but placed pollen of Armstrongi on as many different shades and forms of F. refracta, F. refracta alba and F. Leichtlini as I could get hold of. The results, so far, have been most encouraging, and I have now a strain of tall growing Freesias with up to nine individual flowers on every spikelet, of which every bulb produces several, in colours varying from the palest rose to carmine and purple-red. A small percentage also came in shades of orange-buff and coppery-rose. A selection from these seedlings, with flowers of a violet-rose shade, I have this spring exhibited at one of the fortnightly meetings in the Hall, and an Award of Merit has been given to it by the Floral Committee. I also attempted to cross F. Armstrongi with F. aurea and vice versâ, but with very poor results.

Gladiolus.—So many magnificent strains of hybrid Gladioli now being grown, I made no special attempts to further improve the various races known as gandavensis, Lemoinei, Nanceianus, Childsi, and others, but specially turned my attention to the original species. Thus far I must own that although a good many very pretty hybrids have been raised in my establishment, I have up to now only one or two strains in these Gladioli that may prove useful commercially. A selection out of crosses between G. alatus and G. cuspidatus are dwarf growing, very free-flowering Gladioli that flower in the open ground quite three weeks before the earliest of the nanus or ramosus sections, which, as is well known, precede the gandavensis and other strains in time of flowering by from three to four weeks. These alatus × cuspidatus Gladioli, apart from their usefulness in flowering so early in the open ground (end of May), are very welcome additions to the Gladiolus genus, as each bulb produces from two to five spikes of about a foot high with flowers of fair size and of a charming colouring of rosy-salmon with golden-brown markings. They are just the thing for filling small glasses for table decoration, and other choice floral work. This strain I named Express, and from various persons I have already received letters expressing satisfaction with the habit, time of flowering, and general usefulness of these Gladioli.

Hymenocallis.—With a view of ascertaining the correctness of the supposed parentage of H. macrostephana, after some years' trial I managed to have the two supposed parents, Hymenocallis speciosa and Hymenocallis (Ismene) calathina in flower at same time. The results showed plants absolutely different from H. macrostephana, being much broader and thinner in the leaf; the formation and size of the inflorescence and of the individual flowers also being quite different. When in good condition this hybrid Hymenocallis, the first authentically on record between the evergreen section Hymenocallis and the deciduous Ismenes, is a magnificent plant with an umbel of over a foot and a half across, with individual flowers large, snowy white, exceeding in size even those of the so large-flowered H. macrostephana. This hybrid has been distributed under the name of H. Daphne. Crosses between the white H. calathina and the yellow, green banded H. Amancaes gave charming mules of a delicate sulphur-yellow. These, however, have also at various times been raised in England.

Iris.—The deep sandy soil and the climate of Haarlem seeming to suit a very large portion of the Iris tribe, from times immemorial the Irises have been grown and improved by the Dutch cultivators. The Xiphium (Spanish) and xiphioides (anglica) strains, if raised from seed, will still yield agreeable surprises, but it is doubtful whether these really differ from those that were in cultivation a hundred or more years ago. So many species of Xiphium now being in cultivation that were unknown to our ancestors, I some eight to ten years ago commenced intercrossing the Spanish, Portuguese and Moroccan species of Xiphium, not using, however, the ancestors of the strain that are now known as the Spanish Irises. From these crosses various modifications at last resulted in a highly important race of very large-flowered Xiphiums of the form and shape of the Spanish Irises, but flowering quite a fortnight earlier. The flowers of this strain (which is not yet in commerce) now show the same range of colours as is met with in the ordinary Spanish Irises, but the flowers are of unusual size and great substance, the falls being from 1½ to 2 inches

* A Paper presented to the recent Hybridisation Conference, By C. G. Van Tubergen, Jun., Haarlem, Holland.

across and the entire flower measuring over 4½ inches from tip to tip. It is interesting to note, that whereas in the ordinary Spanish Irises the yellow colour is so abundantly represented, it was only in the later and latest generations of seedlings of my new strain that good and pure yellows have been developing. It is also interesting to note that by continually selecting the earliest flowered varieties, the strain now obtained flowers fully a fortnight in advance of the ordinary Spanish Irises. Among species of the reticulata group the mingling of the richly-coloured I. Bakeriana with selected forms of histrioides and reticulata gave charming combinations of colour among these so early-flowering gems. The influence of I. Danfordiæ so far is not yet apparent. The Juno group of bulbous Irises which in the last dozen years received important additions by the introduction of so many Asia Minor and Central Asiatic species presented another field of work. These Irises usually flower at the time when sharp late night frosts occur, and are therefore not easy to cross, or rather to obtain good seed from. My earliest successes in this group came from crossing Iris persica with the purple I. persica purpurea and from hybrids between I. sindjarensis and I. persica. The former I introduced under the name of I. purpureo-persica and the latter as I. sind-pers, both obtaining awards from the Royal Horticultural and other Societies. Later crosses produced the lovely I. sind-pur (I. sindjarensis × I. persica purpurea), I. pur-sind (the reverse cross) and others. The principal charms of these early-flowering bulbous Irises are their extreme hardiness, their free-flowering character, and their rich colouring.

Rhizomatous Irises.—No section offers greater interest to the plant-lover than the extremely interesting and beautiful section of Oncocyclus and their near allies the Regelia. Considering the great care that in our climate the successful cultivation of the Oncocyclus group demands it has been my aim, by intercrossing the latter section with the easily-grown Regelia, to raise a strain that was to combine the beautiful and large flowers of the true Oncocyclus with the hardy character and free-flowering qualities of the Regelia. I tried crosses both ways, but soon found that hybrids raised from the Oncocyclus with the Regelia did not possess any more vigour than their seed parents, whereas the Regelia section (I. Korolkowi and varieties, I. Leichtlini, I. vaga, etc.), crossed with the Oncocyclus gave birth to a hardy, free-growing and free-flowering race. Some of the varieties raised from these crosses have now been in cultivation in my establishment for over eight years. In point of vigour and free-blooming qualities this new race, which has been distributed under the name of Iris Regelio-cyclus, leaves nothing to desire. Another point in favour of this race is that in the open ground it flowers with the very earliest members of the rhizomatous Irises, such as I. præcox and some pumila varieties, preceding the host of ordinary bearded Irises (germanica) by from three to four weeks. From the Regelia parents they also inherited the desirable property of producing two flowers on each scape, a second flower taking the place of the first on withering. Especially beautiful in this strain are the hybrids of selected varieties of Iris Korolkowi type with I. susiana and iberica, and also crosses between I. Korolkowi violacea with the purple-red I. Mariæ. Strange to say that a cross between I. Korolkowi concolor (which I find is not quite so vigorous as are the other Korolkowi varieties) with Iris Mariae—reputedly one of the most difficult of the Oncocyclus tribe—turned out a group of exceedingly vigorous varieties, of which the now well-known Artemis, a very bold flower with rich purple and violet-black coloured flowers, may stand as the type. Without going into cultural details, the fact that the stock of some of the varieties grown in my establishment, all, of course, propagated by division from single, selected specimens of special merit, in many cases now consist of several hundred plants, sufficiently shows that this race has come to stay in our gardens and not ultimately dwindle away, as will always do the pure Oncocyclus.

Naturally my attention also turned to the hybridising of the best varieties of the ordinary bearded Irises (germanica) with the Oncocyclus. A beautiful and very large flower came out of a cross between I. iberica and I. germanica macrantha, the flower measuring not less than 6

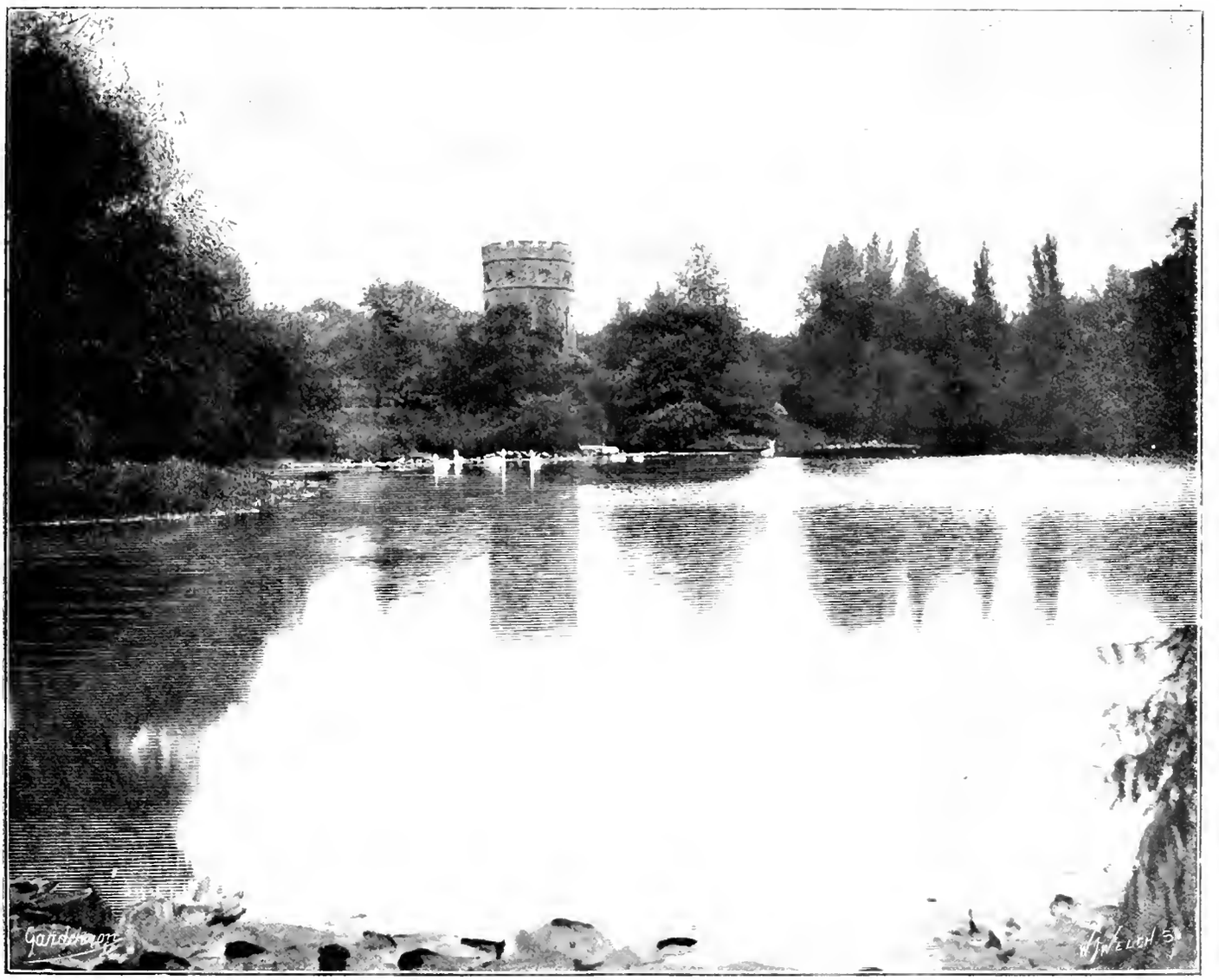


FIG. 51.—THE LOWER LAKE, GUNNERSBURY PARK.

(For text see page 121.)

inches across and of a beautiful blue, with broad, spreading falls, very hairy, and with a dark, black-blue central spot. Unfortunately in our climate, with its damp summers, we cannot give to these plants the dry, baking heat of southern countries, and the plants consequently are very shy-flowering, as are also similar crosses of Oncocyclus with pallida and germanica. Hybrids raised by Sir Michael Foster, however, among these groups, notably paradoxa and iberica crossed with I. variegata and sambucina, are almost as free-flowering as are the ordinary I. germanica.

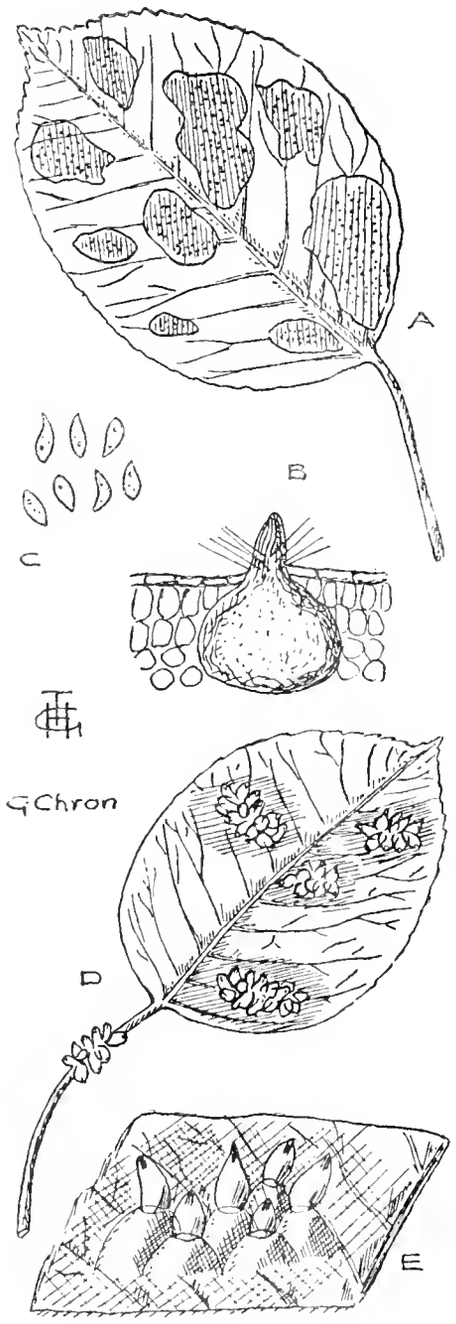


FIG. 52.

A. Pear leaf infested with rust. B. Section through a "spermogonium." C. Spores. D. & E. Æcidial form of the fungus.

Nerine.—Notable hybrids in this beautiful group of autumn-flowering bulbous plants arose from the intercrossing of Nerine pulchella with the best of other species and hybrids. I cannot understand why all the plants which were raised from this cross both ways developed a much later blooming character than either parents, so much so that they usually are about at their best the second and third week in December. These hybrids are very vigorous, with foliage 1½ to 2 feet in length and with flower-stems of corresponding height. The range of colours in these hybrids is from pale rose to bright carmine, and the umbels, composed of very numerous flowers, measure from 6 to 7 inches in diameter. Unfortunately these hybrids seem to be absolutely sterile, so that I fear it will be very difficult, if not impossible, to further develop this strain, which, even as it is now, proves very valuable for producing bright coloured effects in the cool conservatory at the dullest time of the year.

THE PEAR RUST (GYMNOSPORANGIUM SABINÆ).

The Pear rust fungus is not so frequently met with in this country as on the Continent, although the disease is from time to time recorded here.

My notice has been directed to a severe outbreak of this disease in Sussex, where it spread with such rapidity as to suggest that it will secure a firm hold in this country, if it be not arrested by timely measures.

The fungus makes its first appearance in June, manifesting itself by conspicuous red spots on the leaves (see Fig. 52, A). The spots on the upper surface of the leaves, when viewed through a pocket lens, will be seen to be covered with numerous raised pores (spermogonia) of a slightly darker colour. If a section be cut through one of these pores, it will be noticed, when placed under the microscope, to be a small "conceptacle" of the fungus, containing a great number of minute, irregularly-shaped spores (Fig. 52, B, C). It is generally considered that these spores perish after a short time, without any apparent injury; this, however, is a matter to be determined by further inquiry.

Towards August rather large yellowish pustules (known as æcidia), corresponding to the spots on the upper surface, appear on the lower surface (see Fig. 52, D, E). During September numerous spores are formed in the pustules, which, when ripe, are shed and freely carried about in the air. They cannot, however, germinate again on the Pear, and the destructive work of the fungus is terminated, unless it passes through another stage on an intermediary host, namely, bushes of various species of Juniperus such as Juniperus Sabina, J. virginica, and J. phœnicea, etc., all of which are frequently cultivated in gardens. When the "æcidia" on the Pear shed their spores and some fall on to a Juniper, the spores readily germinate on the young and tender shoots, permeating them with a fine spawn and producing a more or less pronounced swelling of the shoot. In the spring, at the time when the Pear leaves unfold, one can detect the fruiting stage of the fungus on the Juniper, which takes the form of large brownish projections around the swollen portions of the stem (see Fig. 53, F). During rain these absorb water, increase in size, and become gelatinous (see Fig. 53, G); the upper surface takes a yellowish tint, which becomes more pronounced as the spores (teleuto-spores) ripen. These latter spores again cannot germinate on the Juniper itself, but should they fall upon a Pear leaf the characteristic red spots, as described above, will make their appearance.

It is thus apparent that the fungus hibernates in the shoots of the Junipers. In consequence, if there are not any Juniper bushes in the neighbourhood, or if such be destroyed, the possibility of a re-appearance of the fungus in the next year is reduced to a minimum. It has been suggested that spraying with a solution composed of 4 lbs. of lime, 4 lbs. of sulphate of copper, and 50 gallons of water will kill the fungus on the Pear leaves. But in large orchards this method is impracticable, as the amount of labour would involve too great an expense, and it seems simple enough to destroy the Juniper bushes—provided, of course, that one is surrounded by obliging neighbours!

H. T. Gussow.

THE PROPAGATOR.

BUDDING.

DURING the month of August the budding of suitable stocks with Peaches, Pears, Nectarines, Plums, Apples, and Roses should be undertaken, either by means of thin shield-buds, with the wood left intact and placed on the shoots from which a corresponding slice has been removed, or in the usual way, with buds from well-matured shoots, from which the woody portion has been removed by an upward movement of the knife, being careful not to take away the base of the bud. Shoots from which buds are to be taken should be most carefully kept from the direct rays of the sun, and be immersed in a covered vessel containing water. In

FIG. 53.

F. Branchlet of Juniper with yellow jelly-like fungus (Gymnosporangium). G. The same enlarged.

the case of standard briar stocks, the insertion of one or two buds suffices to form a crown, doing this on the strongest shoot or shoots close down in the fork, and binding firmly with worsted or raffia.

Dwarf stocks of Manetti, Polyantha, or any other Rose stocks should be budded an inch or two below the ground in order that the bud, when grown, may put forth roots. Low-growing fruit stocks may be budded at about 9 inches above the soil, and the top growth of the stock left intact for a time. The stocks of the Rose, in the case of wildings, may be thinned of the small growths, and the vigorous shoots slightly topped, so as to lessen the chances of breakage by the wind.

Pears may be budded on the Quince, or, in the case of varieties which do not succeed when budded direct on to the Quince, on to some other variety of Pear that is itself on the Quince, the second budding being undertaken in the following month.

There are many ornamental trees and shrubs that may be budded. The present is also a suitable time for layering Carnations, Picotees, and Pinks in the open border, and in pots. In the case of the latter, a rim of zinc, tin, or flakes of thin roofing slate should be placed just within the rim, followed by a filling of sandy loam and leaf soil, the longer shoots being twisted round so as to be got well within the soil when "tongued" and pegged down. Root cuttings, 1, 2 and 3 inches long, of Clematis of the common Traveller's Joy, C. vitalba, or of fine varieties, may be put into pans of sandy soil; of Hellebores in variety, choosing, in the case of these plants, the thick roots, and inserting them in well-drained pans filled with sandy loam and leaf-mould, and affording bottom heat of 70°. Anemone japonica and its varieties, and A. blanda are similarly increased. Cuttings of the single-flowered red and white Camellias, when seeds are not available, may be struck this month in a sand bed having a warmth of 75°. These single-flowered varieties, that are so easily obtained from seed, come in usefully as stocks on which to graft ennobled varieties, and as floral objects in the greenhouse, for they flower with great freedom.

Zonal Pelargoniums for greenhouse decoration, and Fuchsias for early flowering next year, may now be struck, the former in frames or out-of-doors in the full sun in pots, or in the open ground, suitably prepared with sandy loam, and the latter from half-ripened shoots in small pots in a warm house. Cuttings of double-flowered Nasturtiums, which form such decorative objects as basket and balloon plants in early summer for the greenhouse and conservatory, should now be rooted in moderate warmth. The cuttings should be potted, when rooted and grown, in a cool house or pit. During this month cuttings of Phloxes, both shrubby and herbaceous, may be inserted on a shady border; Violas, Pansies, and Pentstemons, Violets of all varieties may all be rooted from soft growths, inserting the slips in sandy loam and leaf-mould in cold frames, and shading the frame with thin canvas or reed mats from the direct rays of the sun. Verbena cuttings, formed of the unflowered shoots, may be taken 2 to 3 inches long, denuded of the lower leaves so far as the cutting enters the sand layer, and inserted in well-drained 32 pots, filled to within an inch of the top with sandy loam and leaf-mould. The pots should be stood on a warm leaf bed, or disused Melon or Cucumber bed, in a close frame, and be carefully shaded. Roots will form in 14 days. Ventilation should be afforded early on fine dry mornings for the space of a quarter of an hour, or damping off will occur with disastrous consequences.

Miscellaneous.

Callistemons (most species), Eugenia apiculata (a good substitute for Myrtle in bouquet work), E. australis, E. sinensis, and E. Jambos (also propagated in the spring), Beaufortia sparsa and Melaleuca Leucadendron, and viridiflora may all be propagated now from cuttings of side-shoots taken with a "heel" of the old wood, and inserted in clean sand, or a mixture of one part peat, two parts sharp sand, in well-drained pots or deep pans. The cuttings should have their leaves removed for one-third of their length, and be inserted at that depth. They require much moisture, greenhouse warmth, and should be covered with bell glasses having a hole at the top. *F. M.*

WATER LILIES.

The splendid hybrid Nymphæas lately introduced by M. Latour-Marliac are not so widely known as they should be, yet they are of easy cultivation, being perfectly hardy, and requiring no broad lake or deep water to set off their beauties. They can be grown in the driest garden, or even on a balcony or a terrace, in a half-cask or tub of water about 18 inches deep, where they will, as a rule, flourish far better than when exposed to the dangers from water-rats, dogs, and waterfowl, which often injure them when planted in a pond.

Moreover, they prefer water of a depth of not more than 2 feet, as they need the full warmth of the summer sunshine, being hybrids between the tropical Water-lilies and those of Siberia and North America.

A cask which has contained paraffin can be sawn in two, thoroughly charred inside to remove all traces of the mineral oil, and sunk to the rim, if preferred, at the side of the lawn, or surrounded by rock-work covered with low Alpine plants; or hidden by pieces of virgin-cork, pot plants and creepers, on the balcony of a town house.

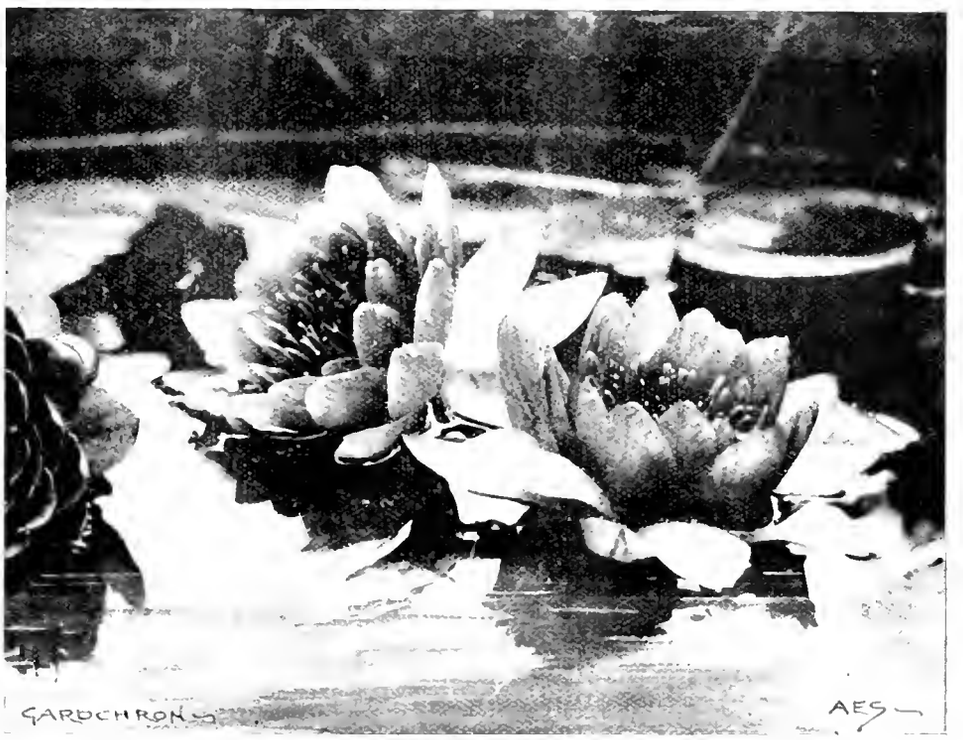


Fig. 54.—Nymphæa gloriosa: flowers rich crimson.

The Nymphæas chosen should each be planted separately in 6 inches of soil, which may consist of good loam and leaf-mould, without, however, any fresh manure, spreading out the roots horizontally and keeping them in place with a few stones. It is necessary to cover the roots thoroughly with soil, and the water can then be added from a rosed can, so as to avoid undue disturbance of the plants.

The water will remain muddy for a day or two, but if a few newts are then added to it, they will quickly clear it and keep it in proper order. Without animal life to balance the plant-life, water soon becomes turbid and sour, but these little creatures (Triton cristatus are thorough scavengers, and water in which they exist soon becomes clear. In this way all difficulties with regard to the cultivation of these fascinating flowers disappear. They bloom throughout the summer, producing a succession of buds until the winter cold sends them to rest.

The following is a list of the finest varieties: Nymphæa gloriosa, with blossoms 8 inches in diameter in the richest crimson; N. Paul Hariot, a pale pink Lily with a carmine centre; N. lucida, the star-like blooms of which are in salmon-pink, held 6 inches above the water; N. sulphurea grandiflora, with shaded yellow flowers; N. Vésuve, in brilliant red; and N. arc-en-ciel, with foliage shaded with carmine and apricot and blush-white blossoms. There are many others in various shades of pink, also very beautiful, but this half-dozen cannot be surpassed. *I. L. Richmond, F.R.H.S.*

THE UNITED STATES DEPARTMENT OF AGRICULTURE.

It is happily true that our own Board of Agriculture has of late years shown signs of progressive development, and Kew is, of course, in its way unique; but to show how much remains to be done, we give the following details concerning the working of the Agricultural Department in the United States. It will be seen that applied science rather than pure research is the main object aimed at.

"The law establishing the department, approved May 15, 1862, outlines the most important features of the work in the following provisions:

. . . the general design and duties of which (the Department of Agriculture) shall be to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word, and to procure, propagate, and distribute among the people new and valuable seeds and plants. . .

The duties of the secretary are, among others, to acquire and preserve in his department all information concerning agriculture which he can obtain by means of books and correspondence and by practical and scientific experiments (accurate records of which experiments shall be kept in his office), by the collection of statistics, and by any other appropriate means within his power; to collect, as he may be able, new and valuable seeds and plants; to test by cultivation the value of such of them as may require such tests; to propagate such as may be worthy of propagation and to distribute them among agriculturists. He shall annually make a general report in writing of his acts to the President and to Congress, in which he may recommend the publication of papers forming parts of or accom-

panying his report, which report shall also contain an account of all moneys received and expended by him. He shall also make special reports on particular subjects whenever required to do so by the President or either House of Congress, or when he shall think the subject in his charge requires it.

Bureau of Plant Industry.

Pathologist and physiologist, and chief of bureau, B. T. Galloway; pathologist and physiologist, and acting chief of bureau in absence of chief, Albert F. Woods; editor, J. E. Rockwell; chief clerk, James E. Jones.

The Bureau of Plant Industry studies plant life in all its relations to agriculture. It includes vegetable, pathological, and physiological investigations; botanical investigations; farm management; pomological investigations; seed and plant introduction and distribution; the Arlington Experimental Farm; investigations in the agricultural economy of tropical and subtropical plants; drug and poisonous plant investigations; tea-culture investigations; dry land agriculture and Western agricultural extension; experimental gardens and grounds, and the seed laboratory.

Vegetable Pathological and Physiological Investigations.

Albert F. Woods, Pathologist and Physiologist.

These investigations have for their objects the study of diseases of agricultural crops and economic plants; nutrition of plants; rotation of crops; the general application of the principles of pathology and physiology to agriculture; the problems of crop improvement, and the production of better varieties of agricultural plants and of crops resistant to disease by means of breeding and selection. The work is conducted by the following officers: Erwin F. Smith, pathologist, in charge of Laboratory of Plant Pathology; Herbert J. Webber, physiologist, in charge of Laboratory of Plant Breeding; Walter T. Swingle, physiologist, in charge of Laboratory of Plant Life History; Newton B. Pierce, pathologist, in charge of Pacific Coast Laboratory; Hermann von Schrenk, expert, in charge of Mississippi Valley Laboratory; Peter H. Rolfs, pathologist, in charge of Subtropical Laboratory; Merton B. Waite, pathologist, in charge of investigations of diseases of orchard fruits; Mark Alfred Carleton, cerealist, in charge of Cereal Laboratory; C. O. Townsend, pathologist, in charge of sugar-beet investigations; William A. Orton, pathologist; W. M. Scott, pathologist; Joseph S. Chamberlain, physiological chemist; Thomas H. Kearney, physiologist; Cornelius L. Sneat, pathologist; Flora W. Patterson, mycologist.

Botanical Investigations.

Frederick V. Colville, Botanist.

This office maintains the economic herbarium, including the collections of useful native plants, weeds, cultivated plants and grasses; investigates the fibre plants of the United States, and is engaged in various other botanical investigations, including the preparation of a manual of the grasses of the United States, a flora of Alaska, and reports on the native plant resources of the country. The office includes Lester H. Dewey, botanist, in charge of fibre-plant investigations; A. S. Hitchcock, systematic agrostologist, in charge of botanical studies of grasses; W. F. Wight, botanist, in charge of Economic Herbarium; W. E. Safford, botanist, engaged in the preparation of reports on economic plants.

Pomological Investigations.

G. B. Brackett, Pomologist.

This branch of the bureau collects and distributes information in regard to the fruit interests of the United States; investigates the habits and peculiar qualities of fruits; their adaptability to various soils and climates and conditions of culture. It studies the methods of harvesting, handling, and storing fruits with a view to improving our own markets and extending them into foreign countries. It includes: William A. Taylor, pomologist, in charge of Field investigations; G. Harold Powell, pomologist, in charge of fruit transportation and storage investigations; H. P. Gould, assistant pomologist, in charge of fruit district investigations; George C. Husmann, pomologist, in charge of viticultural investigations.

Seed and Plant Introduction and Distribution.

A. J. Pieters, Botanist.

This office is charged with the purchase and distribution of valuable seeds and plants, including those allotted by law to Senators, Representatives and Delegates in Congress; also those secured for experimental work conducted in co-operation with the agricultural experiment stations and private experimenters in various parts of the country. The officers are: A. J. Pieters, botanist, in charge; W. W. Tracy, Sr., superintendent of testing gardens; David Fairchild, agricultural explorer; P. H. Dorsett, pathologist in charge of plant introduction garden; C. V. Piper, agrostologist; J. M. Westgate, assistant agrostologist; O. W. Barrett, plant introducer; J. E. W. Tracy, assistant superintendent of testing gardens; George W. Oliver, expert plant propagator.

Arlington Experimental Farm.

L. C. Corbett, Horticulturist.

The Arlington Farm, of which L. C. Corbett, horticulturist, is in charge, is the field laboratory at Washington for the Bureau of Plant Industry. Each office of the bureau carrying on field investigations from the city laboratories maintains experiment plats at the farm. At present the lines of work include truck-work investigations, nursery experiments, forage-plant experiments, pathological and physiological investigations, and cultural and variety tests with fruit.

Investigations in the Agricultural Economy of Tropical and Subtropical Plants.

O. F. Cook, Bionomist.

These investigations are a continuation of the studies in tropical agriculture, but the scope of the work has been enlarged so as to provide for a bionomic treatment of the numerous temperate and subtropical crop plants which were originally natives of tropical countries, such as Indian Corn, Cotton, Beans, Potatos, Tomatos, &c. Experiments are being conducted with weevil-resistant Central American varieties of cotton, and with varieties of corn adapted to special conditions of growth, as in the humid tropics or in arid regions. Coffee, rubber and cacao are the tropical products receiving principal attention. Assisting in this work are: G. N. Collins, assistant botanist; F. L. Lewton, scientific assistant; H. Pittier and John H. Kinsler, special agents.

Experimental Gardens and Grounds.

E. M. Byrnes, Superintendent.

This branch, under E. M. Byrnes, superintendent, is charged with the care and ornamentation of the parks surrounding the department buildings; with the duties connected with the conservatories and gardens, and with the testing and propagation of economic plants. It carries on investigations for the purpose of determining the best methods of improving the culture of plants under glass, and other lines of investigations connected with intensive horticulture.

Seed Laboratory.

Edgar Brown, Botanist.

The object of the work of the Seed Laboratory is to improve the quality of agricultural seeds. Samples submitted by farmers and others are tested for mechanical purity and germination. Public announcements are made of prevalent adulterations and general conditions of poor quality existing in the seed trade. The proper conditions for storage under varying climatic conditions are being worked out. The deterioration of grain in transit is being studied with a view to improving the present conditions. In co-operation with other offices of the bureau, Clover and Alfalfa seed is being produced which is adapted to particular localities.

Plant Analysis Laboratory.

C. C. Moore, Chief.

On July 1, 1904, this laboratory was established and charged with the investigation of the composition of fertilisers, in which work the laboratory will co-operate with the referees of the Association of Official Agricultural Chemists, studying methods of analysis of fertilisers and fertilising substances. Miscellaneous examinations of fertilisers are not made. The laboratory is also to investigate the constitution of plants and is authorised to collaborate with the Bureau of Plant Industry in the chemical investigation of problems in which the Bureau of Chemistry and the Bureau of Plant Industry are mutually interested.

Bureau of Entomology.

Entomologist and chief, L. O. Howard.

The Bureau of Entomology obtains and disseminates information regarding injurious insects affecting field crops, fruits, small fruits and truck crops, forests and forest products, and stored products; studies insects in relation to diseases of man and other animals, and as animal parasites; experiments with the introduction of beneficial insects, and with the fungous and other diseases of insects, and conducts experiments and tests with insecticides and insecticide machinery. It is further charged with the investigations in apiculture and sericulture. The information gained is disseminated in the form of bulletins and circulars. Much museum work is done in connection with the department of insects of the National Museum, and insects are identified for experiment stations and other public institutions and private individuals. The work of this bureau is organised under sections, among which are:—

Fruit Insect Investigations.

A. L. Quaintance, in charge of deciduous fruits; C. L. Marlatt, in charge of tropical fruits.

This field of inquiry includes the study of insect enemies of orchard fruits, and is also divided into subsections: (a) Investigations of the insect enemies of deciduous fruits, such as the Pear, Peach, Plum and Apple, as illustrated by work recently completed on the codling moth; (b) work on the insect enemies of Orange and other Citrus fruits, Olive, Fig, and other subtropical fruits.

Truck Crop and Small Fruit Insect Investigations.

F. H. Chittenden, in charge.

This field of investigation relates particularly to the insects affecting garden vegetables and small fruits, and is facilitated by the maintenance of a small plant in the department grounds for the experimental study of the insects affecting such crops. The enormous increase in truck farming and in the growth of small fruits in this country leads to constant demands for special information covering this field.

Insecticide and Insecticide Machinery Investigations.

C. L. Marlatt, in charge.

This section covers the entire field of practical experimentation with insecticides and insecticide machinery. A chemist working in co-operation with this bureau is detailed by the Bureau of Chemistry to take charge of the analyses and tests of new insecticides. Field operations and experiments are conducted on

growing trees and vegetables. The enormous increase in the employment of mineral oils as a means of destroying insects has led to a special investigation of this subject now in progress.

Investigations of Insects Affecting Shade Trees and Ornamental Plants.

(Under the immediate direction of the Entomologist, assisted by F. H. Chittenden.)

This constitutes a section separate from the investigations on the insect enemies of forests, and although some of the insects are identical the problem of how to deal with them is in most cases quite distinct. It includes the economic treatment of borers, tree defoliators, scales and aphides, as well as other insects that affect trees in public parks and in the streets of large cities. A number of insects of this class, importations from Europe, such as the leopard moth, gipsy moth, brown-tail moth, and imported willow curculio, are demanding more attention year by year. This section includes also investigation of insects affecting greenhouse and garden ornamental plants and trees.

Introduction of Foreign Beneficial Insects.

(Under the immediate direction of the Entomologist.)

Results of extraordinary value in the control of certain imported insect pests have been secured by the introduction of their natural enemies, and two or three notable successes have resulted in the annual saving of more than the cost of the Bureau of Entomology since its origin as a division. The introduction of enemies of the boll weevil and of the gypsy and brown-tail moths comes in this field. When such work is carried out by expert entomologists there need be no risk of introducing injurious forms, but if attempted by private individuals there is danger of the introduction of harmful species.

PROFESSOR ERICH TSCHERMAK

is well known among students of heredity for his valuable contributions to this subject. He had the distinction of being one of the few who independently discovered, by means of his own experiments, the regularity in the process of the hereditary transmission of characters; and simultaneously with Professors de Vries and Correns, he announced these observations, and the re-discovery of Mendel's forgotten papers in which the same principles were first made known. Professor Tschermak has followed up these first experiments with many others on Pisum, Phaseolus, Cereals, &c., and has taken a prominent part in the extension of the subject. He attended and made an important contribution to the recent Hybridisation Conference. He is now professor in the Vienna High School for Agriculture. He comes of a distinguished scientific family, his father being the veteran Professor of Mineralogy in Vienna.

NEW INVENTIONS.

Mr. Valentine Collins, of 58, Lowden Road, Lower Edmonton, sends for our inspection a flower-pot, with a small moveable zinc tray inserted on one side just above the drainage-hole. The value of this is doubtful. A similar tray inserted on an earthenware stand on which a pot may be placed is more likely to be of service in the case of plants grown on a window-sill and periodically drenched with water.

PLANT PORTRAITS.

Apple Kruger's Dickstiel, so named from its thick fleshy stalk. Fruit of medium size, ovoid conic, yellow, red on the sunny side; flesh white, delicate, sweet and vinous in flavour, November to March. L. Spath in *Garten Flora*, tab. 1,553, August.

Iris Lorteti.—*Revue de l'Horticulture Belge*, August 1.

Jasminum nitidum.—*Revue de l'Horticulture Belge*, August 1.

HOME CORRESPONDENCE.

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

Sutton's Evergreen Dwarf Bean.—This is undoubtedly a very fine acquisition among vegetables. It is the heaviest cropping dwarf variety that I know; the plants are laden with pods. From a row consisting of about 30 plants, placed 6 inches apart, when they were allowed to remain ungathered for a week after a first picking, no less than 10 lbs. weight of excellent pods were gathered. Providing the flowers set readily under artificial conditions it should prove a valuable variety for forcing. *G. H. Head, Kingsdon Manor Gardens, Taunton.*

Late Strawberry.—Undoubtedly the best late Strawberry is Givon's Late Prolific, which comes into full bearing after Royal Sovereign, President, and Sir Joseph Paxton have finished. If but two varieties are required for all purposes, Royal Sovereign and Givon's Late Prolific will furnish a supply from the middle of June until the beginning of August. The habit of growth of the latter is compact, the trusses of fruit being carried well above the foliage. If late fruit is in demand, it will repay for extra labour entailed. At the time of writing, August 2, good sized and excellently flavoured fruits are being gathered daily. *S. E., Lavington Park.*

Prof. Tschermak.

Blackberries. The Blackberry crop for 1906 should eventually prove one of the heaviest known. Never before has there been such a set; it is so thick that everywhere the brambles are loaded. It needs but a good soaking rain to ensure a crop almost phenomenal in amount. Rain is badly needed throughout the district. *H. R., Maidstone, August 11, 1906.*

Weather and Fruit Crops in N.W. of Scotland.—Now that the season is far enough advanced to form a fair idea of what the crops will be like, it may be of value to compare it with other seasons and other places. January was, on the whole, a good winter month for the district, mild days alternating with frost, rain and some snow. The weather in February was, however, bad, for we experienced heavy snowstorms and hard frost, and had the most severe snowstorm that has been known in the district for 11 years past, the mail-coach roads being completely blocked for weeks. March was a cold, wet month. Two weeks in April were abnormally warm for the time of year, but the following weeks until the beginning of July were dull, with a low temperature, so that no growth was made, consequently everything is very late. Peas sown in the middle of March are only now ready for use. Cauliflowers sown in heat on January 30, and afterwards pricked into boxes before being planted out, are just beginning to "turn in." The following remarks concern the fruit crop. The Apple yield is below average, some trees having none, others have an average crop. Pears are not grown outside. Plums are below the average. Of Cherries there have been none, when in bloom most of the trees had nothing but a calyx, being quite destitute of stamens and pistil. Apricots, Peaches, and Nectarines are not grown outside. Small fruits are an average crop and good, Strawberries under an average yield and of bad quality. To sum up, it is the latest and the worst season I can remember. *Harry Low, Blackmore Gardens, Garve, Ross-shire, N.B.*

Two Cape Plants now in Season.—I recently saw at a country village flower-show two Cape plants which are worthy of more attention than is generally bestowed upon them. Both were exhibited in the cut state, and were much admired. One was the beautifully chaste Watsonia Ardernei; the other Gladiolus psittacinus. The Watsonia was not so good as it might have been, owing probably to the cultural details being insufficiently understood, for although its culture is quite simple a little neglect or misunderstanding will cause a complete failure, and render the plant unpopular. When better known there surely is a great future for this flower. The Gladiolus was exhibited in a vase containing spikes of G. Brenchleyensis, and made a delightful contrast. The bright yellow of the falls and the yellow splashes in the brilliant hood caused the flower to find many admirers. This Gladiolus is, I believe, the parent of G. Brenchleyensis and Gandavensis. *H. R., Maidstone, August 11, 1906.*

Catalpas in Flower.—In the column headed "London Day by Day," of the *Daily Telegraph* of the 9th inst., I notice the following:—"This year the show of the handsome bloom of Catalpa bignonioides . . . . is disappointingly very sparse in the London district. The parent tree in this country—traditionally said to have been planted by Lord Bacon in Gray's Inn Gardens—has not a single flower." Not having seen the specimen this season, I cannot remark upon its floral condition, but Mr. H. S. Martin writes on the following day to the same paper, stating that there is a tree "covered with magnificent bloom" at Winchmore Hill, N. The tree in our own garden is also flowering well; in fact, better than in former years. The association with Lord Bacon can only be "traditional," Catalpa bignonioides (or syringæfolia) having been first introduced from America in 1726, whereas the great statesman died in 1625. That Lord Bacon planted a tree exactly 100 years after his death is, doubtless, one of the many popular errors kept up by tradition. *Lionel A. de B. Crawshay, Rosefield, Sevenoaks, August 13, 1906.*

Lastrea montana var. truncata. Recently at Thirlmere, on the flank of Helvellyn, I found two plants of this curious variety, in which the frond ends abruptly and squarely, at about two-thirds of the normal length, with the midrib projecting about half an inch and ending in a sharp point, while all the side divisions or pinna end equally abruptly with minute pointed projections. The frond forms thus an oblong parallelogram tapering, however, somewhat to the base instead of being lanceolate or spear head shaped. A curious fact is that though this form of variation is by no means common in Ferns, it occurs so frequently in this particular species that among the Fern hunters of the lake district it is termed the "beginner's Fern" since its frequent occurrence and prominent character make it so easy of recognition. A further remarkable fact, however, is that this peculiarity is exactly imitated in the damage caused to young normal fronds by some insect, which appears to have a temporary domicile in the coiled up tips, and by devouring the growing points symmetrically causes the subsequent development to assume a truncate form quite indistinguishable superficially from the true truncate variation. On close examination, however, it may be seen that the thorn-like projections are absent, and on examination with a lens a minute brown scale at the tip may be seen on the terminations of the main and secondary midribs; such fronds also only occur singly and in association with normal ones on the same plant. This, however, by itself is no criterion of imitative truncation by damage, since single fronds of the true truncate and thorned condition often occur on otherwise normal plants. The damaged fronds are so frequent in some localities as to suggest that the true truncate varieties are due to inheritance of the thus acquired form, a theory which I do not credit for a moment, though the association is the more striking since we know of no parallel case in other species. *L. montana* I have found on several occasions at Aberfeldy, Abertoyle, Strathblane, and elsewhere in Scotland, and, as I have said, it occurs frequently in the English lake district. *C. F. Drury.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 14.—The displays at the meeting held on this date formed a very pleasing show, for the Hall was well furnished with exhibits, and many visitors expressed surprise that such a good exhibition should be found at this season. Groups of Orchids and other flowers were finely shown, and there were also some meritorious exhibits of fruit. A collection of Gladioli was staged of remarkable quality. Hardy flowers were again a prominent feature, and one very large group was composed entirely of showy annuals. That autumn is approaching was evidenced by a beautiful exhibit of Dahlias from the open Each of the committees granted awards to novelties, although not so many as is generally the case. The FLORAL COMMITTEE gave five Awards of Merit, the ORCHID COMMITTEE one Award of Merit to a big-lipped Cypripedium, and the FRUIT & VEGETABLE COMMITTEE raised the award to the culinary Pea "Sweet Content" that was figured on p. 98 from an Award of Merit to a First-Class Certificate. At the meeting of the Fellows in the afternoon 22 new members were added to the roll of the society.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. C. T. Druery, H. B. May, T. W. Turner, J. F. McLeod, J. W. Barr, George Gordon, J. T. Bennett Pöe, Wm. Howe, C. R. Fielder, Chas. Jeffries, Herbert J. Cutbush, Charles Dixon, Chas. E. Pearson, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, George Paul, James Walker and Geo. Nicholson.

The biggest group of plants in the Hall was put up by Mr. Kelf (gr. to Miss ADAMSON, Regent's Park, London). The exhibit almost filled one side of the building, and it was arranged on the ground against the wall. Tall Palms formed a background for masses of Caladiums, Dieffenbachias, Begonia Rex, and other ornamental-leaved subjects, among which were interspersed flowering plants—Agapanthus umbellatus, Plumbago capensis, Celosias, &c. All the plants looked remarkably healthy, especially when it is considered they were grown so near to the heart of London. (Silver Gilt Banksian Medal.)

Messrs. KELWAY & SON, Langport, Somerset, showed spikes of Gladioli in their usual superb style. No fewer than 180 distinct varieties were displayed in the exhibit, including several new varieties; four of the best of these are described under Awards. To attempt a description of the more beautiful would be a difficult task, for each kind appeared as charming as its neighbour. We can only state that they represented the very best shades of colours, and each showed fullness of flower and large, bold spikes. (Silver Gilt Flora Medal.)

Messrs. WEBB & BRAND, The Nurseries, Saffron Walden, showed Hollyhocks, of which flowers they are noted growers. All were double varieties, and each had a very full centre, set off by a collar-like row of outer guard-petals. Miss Lizzie King represents their newest variety, the colour being a good deep shade of yellow. As a selection of the best kinds we may name Peri (cream), Salmon Queen, Black Knight (very dark, verging on black), James Allen (mulberry), and Walden Primrose. (Silver Flora Medal.)

Mr. GEO PAUL, The Old Nurseries, Cheshunt, had sprays of many interesting plants. Pavia macrostachya has trusses of white flowers, with very long stamens, that are tipped with small, red-coloured anthers. Tamarix æstivalis produces long, feathery plumes of bright rose-coloured flowers. The Rose Acacia Bessoniana has stems covered with red spiney hairs; the corolla is also hairy. Many ornamental leaved trees were shown, of which we may mention the large-leaved Lime Tilia americana latifolia, and Catalpa purpurea, the latter being in flower. Other interesting things were Aronia floribunda—in fruit—Calycanthus occidentalis, and Amorpha canescens.

Messrs. WM. ARTINDALE & SON, The Nurseries, Nether Green, Sheffield, filled one of the large central tables with varieties of Fuchsias. The flowers were not in the best condition, and the blooms bore evidences of injury in transit. Large double white varieties were prominent. Theroigne de Mericourt has very large white flowers, with a suffusion of pink. Sylvia is also a double white flower, the bells being very long and very freely produced. Alice Hoffman is a pleasing "bedder." It is fine in habit, and has a bright rosy calyx over a corolla of pure white. Messrs. ARTINDALE also exhibited a batch of Pentstemons. (Silver Banksian Medal.)

Dahlias from the open, the first display of the season, were admirably shown by Mr. S. MORTIMER, Rowledge, Farnham, Surrey. He had both Cactus and show varieties. Gaiety—a suffusion of rose in yellow—Imperial—imperial suggests the shade of purple—Earl of Ravensworth, and Warrior (scarlet) are four splendid show varieties. Among the Cactus type were seen most of last season's acquisitions and standard varieties. (Silver Flora Medal.)

Messrs. GUNN & SONS, Market Hall, Birmingham, displayed a very large assortment of border Phloxes. The beautiful white Fiancée attracted attention. Sheriff Ivory is also one of the best kinds; the colour is salmon pink, with a deeper-coloured eye. Sylphide is, perhaps, the best white Phlox: this was also shown well. Etna (scarlet), Dame de Beauté (pale mauve), and Josephine Gerbaux are other first-class kinds. (Silver Gilt Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, staged a fine assortment of hardy flowers, nearly all of which were annuals. They showed China Asters in all the best varieties, Sweet Sultans, the gorgeous Salpiglossis in many tints, Lavateras, Zinnias, border Pinks, Scabiosa grandiflora, Calliopsis, Rudbeckias, and a host of other pretty things. Specially meritorious were varieties of Antirrhinums, Fire King (fiery orange), Defiance (deep orange), and Brilliant Rose being remarkably fine. (Silver Gilt Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, showed a selection of border flowers, such as garden Phloxes, Kniphofias, Gladioli, Gaillardias, Liliums, Rudbeckias, and other seasonable Composites, Statice, &c. A double form of Gypsophila paniculata is a useful flower for decorative purposes. Pans of brilliantly-coloured Nymphæas were arranged along the front of the exhibit. (Bronze Flora Medal.)

Mr. AMOS PERRY, Enfield and Winchmore Hill, London, N., staged 27 distinct varieties of hardy Nymphæas. Among new varieties William Doogue has large creamy-white flowers, with a suspicion of rose, the petals being well set off by the yellow centre of stamens; James Gurney is a medium-sized claret-coloured flower; and a small kind named N. Leydekeri rosea prolifera. The varietal names are descriptive of the flower, the colour being rose, and the two-dozen flowers exhibited were, with others, gathered from one plant. At the back of the Nymphæas was an array of border flowers. A nice batch of Asclepias tuberosa furnished a pleasing effect of colour. The floriferous Physostegia virginica, showy spikes of Liatris pycnostachya, Phloxes, Gaillardias, &c., were relieved with ornamental Rushes and Grasses. (Silver Banksian Medal.)

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, showed border flowers in variety. We noticed some improved kinds of Montbretias, Westwick being one of the best. Hardy Nymphæas in many choice varieties—N. tuberosa rosea has fragrance in addition to beauty—Phloxes, Liliums, Gladioli, rose-shaded Lupins, &c., are some of the principal subjects displayed. (Silver Banksian Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants., showed garden flowers in great variety. In the centre of the group were a number of Kniphofias. Scabiosa caucasica, Crinum Powelli, Hemerocallis Dr. Regel, an assortment of Gladioli, &c., were seen with others of equal beauty. (Silver Flora Medal.)

Messrs. THOS. S. WARE, LTD., Ware's Nurseries, Feltham, Middlesex, staged a nice array of border flowers, the group having as an edging vases of Cactus Dahlias and sprays of Statice profusa. Phloxes, Carnations, Scabiosas, Pinks, Delphiniums, Aconitums, Pentstemons, &c., were all well shown. (Silver Flora Medal.)

The Misses HOPKINS, Mere, Knutsford, staged a small collection of border flowers and Alpine plants.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., showed vases of the large white Chrysanthemum maximum "The Speaker," and others of Carnations, with pot plants of Souvenir de la Malmaison varieties.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, exhibited a batch of the old Cassia corymbosa, their new Smilax (Asparagus medeoloides) and a few other plants.

Mrs. STANTON, Child's Hill, London, N.W., showed a very large plant of Nephrolepis in a small hanging basket.

A new pink-coloured border Carnation was shown by CLAUDE WATNEY, Esq., Garston Manor, Watford (gr. Mr. Dyke).

Mr. JOHN COOPER, Hardy Plant Nursery, Chipping Norton, showed a shapely Carnation named Roy Morris—the colour is rich scarlet. Another named Mrs. J. Cooper is flesh or pale-pink colour.

Messrs. JAMES CARTER & Co., High Holborn, London, showed dwarf Antirrhinums and double-flowering Hollyhocks.

Messrs. WM. BULL & SONS, King's Road, Chelsea, S.W., displayed ornamental foliage plants suitable for stove and greehouse decoration.

AWARDS OF MERIT.

Rose Gottfried Keller.—A single variety of the Austrian Briar type, with exquisitely-tinted petals. It was raised by M. Fröebel, of Zurich, the parents being Austrian Briar and a Tea variety. The flowers more resemble those of the Briar, the Tea blood being more apparent in the wood and foliage. The petals are a soft rose-pink shade in their upper parts, merging to a yellow centre. The flowers show a slight tendency to doubling. They are very freely produced, and a succession is maintained through the season. Shown by Mr. GEO. PAUL, Cheshunt.

Gladiolus Mrs. Cecil Baring.—A very large flower of pale sulphur or lemon shade, with a remarkable lower petal that forms a distinct lip. This is coloured at its extreme end of a sulphur yellow, and passes to a canary yellow shade, and behind this it is densely spotted with bright red. The uppermost petal is very reflexed. The spike is tall, the flower-bearing portion being 18 inches to 2 feet long.

G. White Knight.—A very bold flower with massive white petals, the lower ones showing traces of rose-coloured guiding lines. The stamens are pale lavender coloured.

Golden Ray.—A variety showing a desirable break in colour, approaching yellow. The lip has an orange-coloured blotch, with carmine stripes running through it. The flowers are somewhat hooded in the young state.

G. Mrs. Coddington.—A flower of remarkably pleasing shape, and one having exquisite colouring. The two lower petals of the inner whorl are heavily marked with violet carmine, on the outside of which is a splash of yellow. The upper petals are suffused and dotted with rose.

The four Gladioli shown by Messrs. KELWAY & SONS.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair, and Messrs. Jas. O'Brien (hon. sec.), J. W. Odell, H. A. Tracy, W. H. Young, W. H. White, H. G. Morris, Arthur Dye, Walter Cobb, R. G. Thwaites, W. Boxall, G. F. Moore, F. Menteith Ogilvie, T. W. Bond, and Major G. L. Holford, C.I.E., C.V.O.

For the time of year there was a very fine show of Orchids.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an effective group, in which the main feature was a selection of their fine strain of Lælio-Cattleya bletchleyensis, whose flowers, always fine, exhibit considerable variation in colour, most of them being rosy-lilac with large purple labellums. One distinct form had pale yellowish sepals, and petals with lilac tint in the veining, and a reddish-purple lip. The group was completed with good forms of Cattleya Warscewiczii, Odontoglossum ramosissimum, Dendrobium Phalænopsis, Brasso-Lælio-Cattleya Mackayi, a nice plant of Odontoglossum bictonense album, Aerides Lawrenceanum, Cattleya Lord Rothschild, Theodora gomesioides, Epidendrum Medusæ, &c.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, secured a Silver Flora Medal for a very interesting group in which several forms of their splendid type of Odontoglossum Rolfeæ were displayed. The flowers of all were large and finely formed, the ground colour varying from white to primrose, and with showy purple mark-

ings. Two spotted forms of O. crispum; a plant of the dwarf Oncidium macranthum nanum, which never produces a long trailing spike; a very fine Miltonia Schröderiana, several of the pretty Anaectochilus Thompsoni var. Gentilii, Lælio-Cattleya Berthe Fournier, several good L.-C. callistoglossa, L.-C. Issy, Cattleya Vulcan, C. Gaskelliana alba, C. calummata nobilior, C. Lord Rothschild, and various hybrid Cypripediums, &c., were also included.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), staged a group in which were varieties of Cattleya Warscewiczii, Lælio-Cattleya Remula, and various hybrid Cypripediums, of which C. Wottoni was the best. Species and varieties were represented by Saccolabium ampullaceum, Masdevallia Carderi, and other Masdevallias, Scaphosepalum pulvinare, Pleurothallis scapha, and other Pleurothallis, Brassia Keiliana, Cælogyne Massangeana, &c. (Silver Banksian Medal.)

Messrs. Hugh Low & Co., Enfield, staged a neat group in which were several good Cattleya Gaskelliana, C. bicolor Grossii, C. granulosa, Catasetum macrocarpum, Mormodes pardinum unicolor of a clean yellow tint; the rare and pretty reddish-yellow Epidendrum pristes, Dendrobium Dearei, Oncidium carthaginense, &c. (Silver Banksian Medal.)

Messrs. Stanley & Co., Southgate, arranged an effective group, in the centre of which was a batch of Oncidium varicosum, having in front a number of good plants of Cypripedium A. de Lairesse and at each side good examples of Lælia crispa. The group was completed with Cattleya Harrisoniana, Odontoglossum crispum, O. Harryanum, O. Hunnewellianum, Dendrobium Phalænopsis, Lælio-Cattleya elegans, and various hybrid Orchids. (Silver Banksian Medal.)

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), sent an interesting collection of rare Orchids, including a grand specimen of Platyclinis filiformis, Cycnoches Egertonianum viride, C. maculatum, Catasetum fimbriatum and its variety platypterum, two pretty specimens of the floriferous Odontoglossum aspidorhinum, Dendrobium glomeratum, and the rare Oncidium panduratum.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent the very fine rose-purple tinted Cattleya Warriniana, "Fowler's variety," with a strong spike of six large flowers; two forms of Lælio-Cattleya elegans; the dark coloured Cypripedium Bingleyense var. Æneas, and C. Penelope (Morganiæ × superbiens).

Jeremiah Colman, Esq., Gatton Park, showed fine varieties of Lælio-Cattleya bletchleyensis, L.-C. Nyssa, L.-C. Phryne, L.-C. Atalanta, and L.-C. elegans Schröderiana.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), staged a small group of his Lælio-Cattleya Geoffrey (L. Lucasiana × C. Warscewiczii). The flowers are formed like those of a small L. Jongheana, with an elongated crimped lip. Sepals and petals pale lilac, base of the lip white to yellow, front and margin purple. Mr. Lucas also showed L.-C. Lucasi (L. Iona × C. Warscewiczii), a pretty flower somewhat resembling L.-C. Ingrami, and various hybrid Cypripediums.

F. Ducane Godman, Esq., Horsham (gr. Mr. Moody), sent a specimen of Satyrium carneum.

M. Jules Hye de Crom, Ghent, sent a small plant of Miltonia Hyeana (M. Bleuana × M. vexillaria Leopoldi). Flower white with faint rose mark in centre and yellowish mark at base of lip.

AWARDS.

Award of Merit

To *Cypripedium Harri-Leeanum, Park Lodge variety* (Harrisianum superbum × Leeanum), from E. Roberts, Esq., Park Lodge, Eltham (gr. Mr. W. Carr). A very fine massive and dark-coloured hybrid. Dorsal sepal large and bearing many feathered blackish lines and a bright rose tint extending to the clear white margin. Petals and lip broad and heavily tinged with reddish-purple.

Botanical Certificate.

Cycnoches Egertonianum viride, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A singular species bearing a long raceme of pale green flowers.

Cultural Commendations.

To Mr. H. G. Alexander (Orchid grower to Major G. L. Holford, C.I.E., C.V.O.) for the inflorescence of a noble plant of Odontoglossum crispo-Harryanum. The two spikes, coming from one bulb, were 5 feet 6 inches long, one bearing 24, and the other, with 11 branches, 49 flowers.

To Mr. W. H. White (Orchid grower to Sir Trevor Lawrence, Bart.) for a noble specimen of Platyclinis filiformis with about 100 spikes.

Diploma Awards.

Lælio-Cattleya elegans and Hybrids.—*1st Diploma.*—L.-C. Berthe Fournier, from Messrs. Charlesworth & Co. *2nd Diploma.*—L.-C. elegans Turneri, from J. Gurney Fowler, Esq. (gr. Mr. J. Davis).

Cattleya Warscewiczii and Hybrids.—*1st Diploma.*—L.-C. Nysa gloriosa; *2nd Diploma.*—L.-C. bletchleyensis, both from Jeremiah Colman, Esq. (gr. Mr. W. P. Bound).

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (chairman), and Messrs. Jos. Cheal, Henry Parr, S. Mortimer, Wm. Pope, R. Lye, Edwin Beckett, H. Markham, Horace J. Wright, Geo. Kelf, Joseph W. Davis, F. L. Lane, C. Foster, J. Jaques, and Owen Thomas.

Miss Adamson, South Villa, Regent's Park, London, exhibited a number of pot fruit trees, and dishes of various indoor fruits. Apple, Pear and Plum trees were in pots, most of which were bearing freely, and there were also bunches of Black Hambro, Muscat of Alexandria and Foster's Seedling Grapes cut from pot vines, with dishes of Plums, Kirke's Seedling, Jefferson (a good dish), Reine Claude du Comte Atthems, and others, Early Rivers' Nectarine, Brown Turkey Figs, Gooseberries in variety, Clapp's Favourite Pears, and other fruits. (Hogg Memorial Medal.)

Messrs. S. Spooner & Sons, Hounslow Nurseries, Hounslow, Middlesex, showed a dozen varieties of early culinary and dessert Apples. A finely-coloured sample of Lady Sudeley was included, also Goodenough's Nonsuch—a shapely fruit, of medium size, and with a pleasing eye. It had the appearance of a solid fleshed variety. Beauty of Bath, Pott's Seedling, Lord Grosvenor and Red Quarrenden are others that were prominent. (Silver Banksian Medal.)

Mr. S. Lawson, garden superintendent, Horticultural College, Swanley, showed bunches of Muscat of Alexandria and Canon Hall Muscat Grapes and dishes of Peaches, Sea Eagle, Mr. Gladstone and Princess of Wales, all of first-class quality. (Silver-Gilt Banksian Medal.)

Leopold de Rothschild, Esq., Gunnersbury Park, Acton, W. (gr. Mr. G. Reynolds), showed eight varieties of Peaches, all of magnificent quality—Sea Eagle, Albatross, Princess of Wales, Gladstone, Warburton Admirable, Barrington, and others. (Silver-Gilt Knightian Medal.)

Mrs. F. A. Brace, Doveridge Hall, near Derby (gr. Mr. G. Wadeson), showed a collection of hothouse fruits, Grapes, Melons, Nectarines, Cherries, Peaches, Figs, &c. The half-dozen bunches of Madresfield Court Grapes had nicely finished berries. (Silver-Gilt Banksian Medal.)

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, London, N., showed well-fruited trees of Brown Turkey and Brunswick Figs.

Awards.

Culinary Pea "Quite Content."—This variety had previously received an Award of Merit, and is described and figured on p. 56. The Committee raised the award to a First Class Certificate. Shown by Mr. Edwin Beckett, Aldenham House Gardens.

NEWBURY HORTICULTURAL.

August 6.—For close on sixty years this Society has held an annual flower show, and the 58th, held on this date, was equal, and in some respects superior, to the previous ones. The weather was delightful, and the attendance a record one. The show was held in the grounds of Goldwell Park, kindly lent by F. R. Wilson, Esq. The park, being situated on rising ground and bordered by grand old trees, is an ideal spot for the display. Superior quality obtained in many of the exhibits, the groups were more numerous than on previous occasions, there being six, and all were good.

Plants.—The leading position in the group classes was taken by Mr. J. Lye (gr. to J. Liddell, Esq., Sydmonton Court), and although he had fewer plants than his competitors, they were more beautifully arranged. Mr. J. Howard was a good second, and the veteran Mr. C. Ross, Welford Park Gardens, was third.

In the class for greenhouse plants Mr. T. Surman (gr. to M. H. Best, Esq., Donnington Grove) had the only collection, the class being one of the weakest in the show, but large plants are now not much grown. For foliage plants Mr. J. Howard (gr. to Lady Sutton, Benham Park) was well to the front, Mr. Ross being awarded 2nd place. For Exotic Ferns, Messrs. Howard and F. Lock (gr. to G. F. Plevins, Esq., Tile Barn) won in the order named. Coleus were well shown, Messrs. Surman and Johnson taking the 1st and 2nd prizes respectively. Fuchsias were superb; indeed, they are always a feature at Newbury, for, though somewhat small, they were otherwise perfect specimens. Mr. T. Surman had the best plants, Mr. P. Mara (gr. to Sir A. Arbuthnot, Newtown House) being 2nd. Messrs. Surman and Howard had the best specimen plants in bloom, and Messrs. W. R. Cox and C. Ross the best foliage plants.

Table decorations, though less extensive here than at some shows, formed an attractive feature. Miss F. Harrold took the 1st prize, her table being furnished with Carnation Raby Castle; 2nd, Miss L. Harrold, with an arrangement of yellow and white Iceland Poppies. Mrs. T. Mercer had the best bouquet; Mrs. H. W. Parker and Miss Knight showed the best flower sprays and buttonholes.

Cut flowers in the open classes occupied much table space. Strong competition was seen in the class for a collection of 24 bunches. The 1st prize went to W. St. J. Leng, Esq., Welford Park (gr. Mr. Randall), whose flowers were beautifully arranged; 2nd, Mr. D. Bosley. Displays of Roses were excellent. Messrs. Jefferies & Son, Cirencester, were easily 1st; 2nd, Messrs. Cooling & Son, Bath. In the amateurs' class Mr. A. Galt (gr. to C. E. Keyser, Esq., Aldermaston Court) won the 1st prize; Messrs. Cox and Smith taking the 2nd and 3rd prizes in the order named. Messrs. Cox, Galt, and Smith had the best Sweet Peas; and Miss B. Frost the best bridal bouquet. Mr. J. R. Tranter, Henley, won in the class for Dahlias; while Mr. Newman had the best Carnations. The classes for amateurs, mechanics and artizans were well contested. Indeed, in many cases the hardy fruits and vegetables were equal to those in the open classes.

Fruit occupied much space. There was a lack of collections, but a splendid lot came from Mr. J. Howard, Benham Park, he having beautifully-finished Grapes, Peaches, Nectarines, Melons, and Apricots. The same exhibitor had the best Pineapple. Mr. T. Surman showed the premier black Grapes; Mr. A. Ross the best Muscat of Alexandria; while Mr. T. Surman won for any other variety of Grapes. Mr. Galt was 1st for Melons, and Mr. Lock led in the class for Peaches; while for Nectarines, Dessert Apples, Culinary Apples, and Pears the winners were Messrs. Howard, Ross, Randall, and Surman respectively. Cherries, Figs, and Plums were also shown.

Vegetables were staged in the open owing to the very large number of other exhibits staged in the tents. The quality of the vegetables shown was splendid. Potatos were remarkable for their clear skin, shape, and good table quality. In both the classes for collection of vegetables Mr. Lye, of Sydmonton Court, was a good 1st.

BASINGSTOKE HORTICULTURAL.

August 6.—The 30th annual summer exhibition of this Society was held in Golding's Park, the seat of Mr. W. C. Lefroy, and was in every way a success.

Plants.—Displays of plants were more numerous than usual. In the class for nine specimen plants Mr. J. Wasley (gr. to J. B. Taylor, Esq., Sherfield Manor, Basingstoke) was 1st, staging, amongst other things, a specimen of Crinum Mooreni, with 24 flower spikes, and a freely-flowered example, 4 feet high, of Thunbergia; 2nd, Mr. Neal (gr. to John Mares, Esq., Manor House, Basingstoke). Exotic Ferns of good quality were freely contributed. Mr. J. Keen (gr. to H. Welch-Thornton, Esq., Beaurepaire Park) won the 1st prize. He showed a remarkably fine plant of Adiantum Farleyense. Mr. Keen was successful for a specimen foliage plant with Cycas revoluta. Mr. Wasley had the best flowering plant in Clerodendron Balfourii. The best group of miscellaneous plants arranged for effect was shown by Mr. Best (gr.

to F. LEYLAND, Esq., The Vyne, Basingstoke). Soft-wooded plants were numerous and good.

Cut flowers made an interesting feature. Mr. Neville (gr. to F. W. FLIGHT, Esq., Cornstiles, Twyford, Winchester) secured the premier awards for 24 and 12 blooms, and for 12 Tea Roses. Carnations were shown well. Mr. Childs (gr to the Hon. Mrs. F. BARING BROWN, Candover) won in the class for 36 blooms in 12 varieties. Mr. WASLEY had the best stove and greenhouse flowers in 12 varieties and the best hardy flowers.

Fruit of good quality was seen. Mr. WASLEY took the 1st prize for a collection of six varieties; also for two bunches of Muscat Grapes, and for two bunches of any black Grapes. Peaches, Nectarines, and Plums in all classes were shown well. Mr. BEST won the 2nd prize in several classes, and he secured the 1st place for any white Grape other than Muscat of Alexandria with Foster's Seedling, in good condition.

Vegetables at Basingstoke are always numerous and good. Mr. BEST won the premier award in Messrs. Sutton's, Toogood's, and Carter's classes respectively with first-class produce.

BISHOP'S WALTHAM HORTICULTURAL.

JULY 31.—The thirty-second annual exhibition of this society, held on this date, was in every way a success. This association was started as a cottage-garden society, and it has done much to encourage horticulture in the neighbourhood. From the cottage element it has progressed, and it is now quite a flourishing society, holding annually an excellent show. Mr. E. Molyneux has been the hon. secretary for the past 20 years.

In the class for six specimen plants Mr. G. Ellwood (gr. to W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham) was an easy winner; 2nd, Mr. G. Simmons (gr. to E. A. PONTIFEX, Esq., Hill Crest, Bishop's Waltham).

Tuberous-rooting Begonias were well shown by Mr. Barnes (gr. to Mrs. AUSTIN, The Thickets, Bishop's Waltham), who won the first place with high-class blooms; 2nd, Mrs. HUMPAGE, Dell Cottage, Swanmore. The best Table plants were contributed by Mr. ELLWOOD.

Cut flowers were numerous and good. For twelve varieties distinct Mr. ELLWOOD staged indoor varieties of a choice character, and won easily. Mr. G. Sherwood (gr. to T. H. GILLSON, Esq., Swanmore Cottage) secured the 2nd place.

Sweet Peas were a strong class. For a collection of these flowers Mr. C. H. Holloway (gr. to Lord ABERDARE, Longwood House, Winchester) was 1st, Mr. Cooper (gr. to Miss GLADSTONE, Harrington Hill, Swanmore) being 2nd.

For the prizes offered by Mr. H. Eckford, Wem, for 12 varieties there was a keen competition. Mr. H. WRIGHT ANDERSON, The Firs, The Chase, Bishop's Waltham, was successful, winning with high-class blooms that were well arranged.

Mr. BARNES won in the class for six bunches, the prize being given by Messrs J. Carter & Co., and Mr. HOLLOWAY secured Mr. Breadmore's prize also for six varieties.

The best six bunches of Roses were shown by Mr. ELLWOOD, but he was closely followed by Mr. H. Childs (gr to Mrs. MACRAE, Mearstoke House, Bishop's Waltham).

For a similar number of Rambling Roses the prizes were again awarded in the same order. Carnations made an interesting display. Mr. COOPER won in the class for six bunches, Mr. ELLWOOD taking 2nd place.

The last-named exhibitor put up an imposing exhibit in the class for 18 varieties grown out of doors which won for him the premier award. Mr. BARNES occupied a similar position for 12 kinds, Mr. CHILDS following.

Table decorations are always a great feature at this exhibition, and on this occasion no fewer than 12 tables were seen. In the open class Mr. CHILDS was awarded the premier position with an arrangement of Carnations, Gypsophila, Ferns, &c., all lightly disposed; 2nd, Miss L. PAYNE, Frogmore, Bishop's Waltham.

In a class for floral decorations devoted to ladies only there was sharp competition. Miss G. MEDLICOTT, Swanmore Vicarage, won with Shirley Poppies pleasingly blended. The best arranged vase contained Dorothy Perkins Rose in masses, with Gypsophila nicely intermixed.

Fruit, although not numerous, was good in quality. In a class for six dishes of fruits Mr. ELLWOOD won, showing Madresfield Court and Muscat of Alexandria Grapes, Peaches, Nectarines, Melons, and Cherries, and the same grower won in the smaller class for four dishes, Grapes being excluded.

In the class for four dishes of outdoor fruits Mr. BARNES took the 1st prize with excellent produce. Especially fine in this exhibit was a dish of Red Astrachan Apples.

The best two bunches of black Grapes were shown by Mr. HOLLOWAY, he having the variety Black Hamburgh. Exhibits of small fruits were numerous and good.

Vegetables were abundant and of high quality. Messrs. Toogood & Sons, Southampton, offered prizes for eight dishes, that brought brisk competition. Mr. BARNES won with a high-class exhibit. Mr. Sherwood (gr. to T. H. GILLSON, Esq., Swanmore) followed closely.

Mr. ELLWOOD won Messrs. Sutton's and Messrs. J. Carter and Co.'s first prizes for six varieties of vegetables.

Mr. SHERWOOD staged the premier collection of Potatos in six varieties.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The monthly committee meeting of this society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on the 13th inst., Mr. THOS. WINTER in the chair. Four new members were elected and one nominated. The death certificate of the late Mr. W. C. MARCHANT, of Haywards Heath, was produced, and the sum standing to his credit in the books of the society was granted to his nominee. It was decided to hold the annual dinner in the second week in October; the date and other particulars will be duly announced.

ENQUIRIES AND REPLIES.

APPLES BURIED FOR KEEPING.—In reply to "Taylor," Somerset, *re* burying or clamping Apples similar to Potatos, I have found they keep well until February and March. They will not keep long when taken out of the ground, especially if they are not very carefully handled. They taste a little earthy, but this flavour is lost in cooking, and if they are stored in tins or in boxes, I imagine they would not gain this flavour, as I had only straw between mine, which were buried more in the nature of experiment. Northern Greening was the variety I experimented with. *G. Fulford, Merstham.*

ANSWERS TO CORRESPONDENTS.

AMPELOPSIS VEITCHII, &c.: *J. C.* Cuttings inserted in sand under a hand-light in September in the open border will be ready for planting out the following spring. Ivy cuttings can be propagated in the same manner, or thickly in pots in a close frame, the present being a suitable season for the work. The best plan of raising Grape vines is from "Eyes" or single buds. They should be plunged in a bottom heat of 70° to 80° at the end of January and be kept close and moist, when they will readily form roots. They can also be raised from cuttings of wood in the rest state, but bottom heat is almost essential to promote the formation of roots.

APPLES CRACKING: *A. S.* The cracking is caused by a fungus, Fusicladium dendriticum. See *Gardeners' Chronicle*, July 14, p. 22

BIRCH: *A. B.* The leaves are swarming with aphides. Try spraying the tree with quassia water or even soapy water.

BOOK: *Miss A. R. A. Johnson's Gardeners' Dictionary* will be found useful for your purpose. It can be obtained from our publishing department, price 9s. 6d., post free.

CELERY AND LEEKS: *Constant Reader.* The system is frequently adopted to keep the stems clean and to further expel the light to prevent the formation of the green chlorophyll. We have not heard it recommended in the case of Leeks. You should earth the plants at intervals, beginning now if they are large enough. If the land has wireworm it should receive a dressing of gas lime in the autumn and be allowed to lie fallow for some weeks after. Sow the plants you mention now, and for further information see the *Calendar of Garden Operations*, to be obtained from our publishing department, price 7½d. post free

FUCHSIAS: *E. H.* Try starvation, apply less water, and use smaller pots. Other questions next week

GLOBE ARTICHOKES: *Correspondent.* See note on the subject in our Calendar—the Kitchen Garden, p. 129.

GRAPES: *J. T.* The Grapes are both shanked, and the Muscats are attacked by fungus. Without knowing all the conditions we cannot say for certain what is the cause of the trouble. It may be too much or too little water. Look to the border, and next season spray the Vines with weak Bordeaux mixture.

GUMMING: *R. J.* There is nothing to add to the account of gumming, published in a recent issue.

LILY: *F. S.* What you send is a distorted form of L. auratum, more curious than beautiful. The perianth-segments are all greenish, and the stamens are replaced by carpels which form a ring around the true carpels in the centre, a very interesting case but one which we fear you will not appreciate.

MELONS: *Annoyed.* Your plants are affected with Melon-spot caused by a fungus Cercospora melonis. Remove all the affected plants at once and burn them. Spray the healthy plants with weak Bordeaux mixture, trying it first in order to ascertain what strength to apply it, for if you use it too strong it will injure the foliage. —*W. H. D.* We do not think the risk would be great, but as it is much better to be on the safe side we should certainly recommend you not to eat the fruit.

NAMES OF PLANTS: *T. O.* No. 3 (from last week), Napæa dioica.—*A. P. N.* Probably Allium multiflorum. You should have sent foliage.—*R. S.* Centaurea suaveolens, one of the many varieties.—*W. Y. S.* 1, Leycesteria formosa; 2, Verbascum sp.; 3, Aconitum Napellus, poison; 4, Lythrum Salicaria; 5, Aconitum Lycoctonum, poison.—*F. C. L* Indigofera decora.—*R. S.* Alonsoa incisa. It does very well as a summer bedding plant.—*A. M.* 1, Phragmites communis; 2, Eupatorium cannabinum; 3, Agrimonia Eupatorium; 4, Inula dysenterica; 5, Hypericum perforatum; 6, Epilobium hirsutum. —*J. M.* 1, Angelica silvestris; 2, Sison Amomum; 3, Dipsacus pilosus; 4, Calamintha clinopodium; 5, Galeopsis Tetrahit.—*F. E. A.* 1, Spergularia rubra; 2, Pernettya mucronata; 3, Centaurea Jacea; 4, Lycium sinense; 5, Solidago virga aurea; 6, Syringa Josikæa.—*Miss L.* Hedychium Gardnerianum, one of the Ginger family.—*Interested.* Rhus Cotinus. The true flowers are not formed, or only very sparsely —while the flower-stalks are very numerous and slender—forming an intricate mass, whence the plant is called the Wig Plant.—*F. S.* Hibiscus syriacus, frequently but erroneously called Althæa frutex.—*Batum, Russia.* 1, 2, 5, we do not know these plants, and they are not included in the *Index Kewensis*; 3, New Zealand; 4, Chile.

NECTARINES: *W. & T. S.* The stones are split and decay starts from the centre and extends outwards, which indicates a too liberal supply of water. There is no fungus disease present.

PÆONY FAILING: *G. W.* Without seeing a portion of the plant we cannot be certain, but we suspect the Pæony disease, Sclerotinia pæoniæ is the cause of the trouble. See *Gard. Chron.*, August 13, 1898, with figure.

TOMATO: *A. G. H.* A dessert variety of fair size. We can't tell the name from the berries only.

TO MAKE LAVENDER WATER: *Inquirer.* To one pint of highly rectified spirit of wine add essential oil of lavender 1 ounce, essence of ambergris 2 drachms; put all into a quart bottle and shake it extremely well. You would not be able to make it from the flowers satisfactorily without a course of instruction and expensive apparatus.

WILLOW: *A. B.* The galls are produced by a fly, a species of Cecidomyia. You can do nothing but burn as many of the affected leaves as you can.

COMMUNICATIONS RECEIVED.—C. T. D.—A. W., Redruth, photo with thanks—Annoyed—W. B.—H. N. R., Singapore —G. W.—Dr. Franceshi—H. W. W.—A. B.—W. H. D.—L. H. de B. C.—A. S.—T. F., photo (with thanks) under consideration—F. M.—R. H. B., Stockholm—A. B., next week—G. W. K.—O. T., with thanks—E. H.—J. H., Rochester, U.S.—T. E. W.—O. S., Munster—F. F. Buxted, many thanks, we shall probably use the illustration later on—W. B.—E. H.—W. H. B.—W. G. S.—L. Sutton—F. J. M.—S. W. F.—H. W. W.—W. C. B.—H. J. C.—W. G. S.—J. O'B.—H. J.—B. Sc.—Quality—A. Y.

For Market and Weather Reports see page viii.

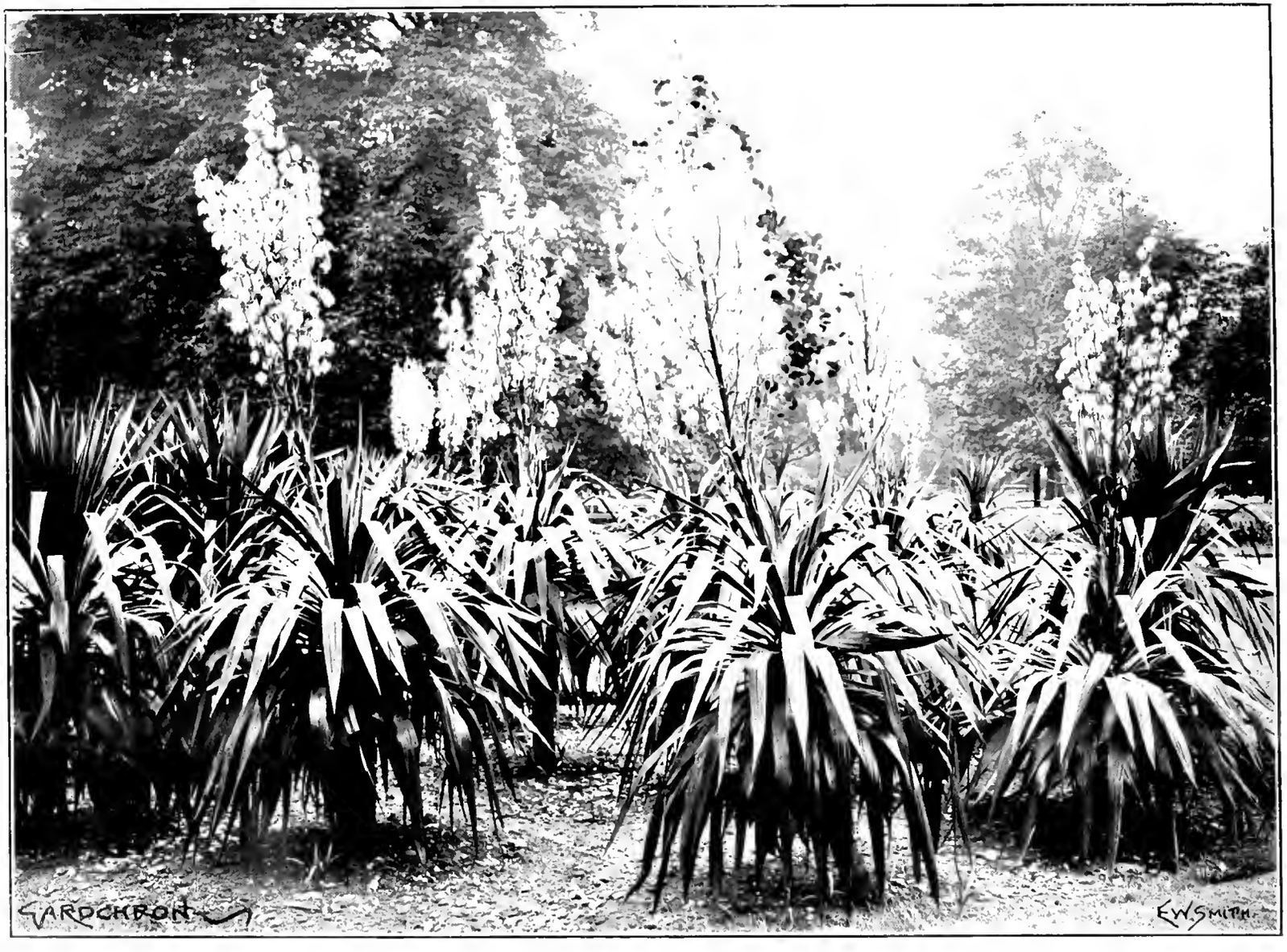


Photo by E. J. Wait.

A GROUP OF YUCCAS IN THE ROYAL GARDENS, KEW.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,026.—SATURDAY, August 25, 1906.

CONTENTS.

ILLUSTRATIONS.

BALMAE, KIRKCUDBRIGHT.

THERE are few gardens which do not yield some pleasure, although it may be that this is mingled with regret at so many unsatisfactory features. Old-world gardens, however, possess a special charm, wherever they retain their ancient features, mingled though these may be with the modern in the shape of improved varieties of old plants or others unknown when the garden was first made. This charm is all the greater when, as in the subject of this notice, the garden is the pleasure of an owner of taste, and with a love for its adornment.

Balmae, Kirkcudbright, the residence of the Countess of Selkirk, is one of these old places which one still meets with here and there, which have as their accessories quaint old gardens embodying the features of bygone days, and bearing about them marks of their antiquity. It seems to have been designed and laid out with a view to enclose within its walls a variety of features, so that, sheltered from the storms which at times sweep swiftly and wildly up the Solway, the dwellers in the mansion near by might enjoy the shady and the sunny walks, the little lawns, the miniature lake, which lies in a corner of the garden, and the view of the flowers, the fruit, and the vegetables, which then, as now, occupied its area.

Balmae is also out of the beaten track of garden pilgrims, and those seldom find their way to this sequestered spot, which lies some five miles from Kirkcudbright, and in a beautiful position, close to the sea-coast of that portion of the Solway between the Dee and the Urr.

The mansion itself is of considerable age, and possesses a singular architectural feature in the shape of a massive portico and pillars, which seem to have been designed for a much larger house, and which set one wondering whether they were part of the original plan or were added at a later period. Although not of a size proportionate to the portico, the mansion is of good size and of the good old Scottish type, where no space is wasted by a redundance of architectural features, and eminently suited for an exposed position in a rainy district such as this. The small formal flower garden lies to the back, or garden front, and consists mainly of bedding plants arranged on the lawn. This is surrounded with trees of considerable age and size, and there is consequently some deficiency of sun for the plants, which, however, are looking well despite the difficulties of their position. Some good Asters were among them. The garden front of the house is largely covered with creeping plants.

A short distance from the mansion we come to the garden proper, which is of large extent, and is one which has evidently retained many of the old features which have characterised it for years. It is difficult to describe such a garden, but an attempt must be made. The walls are about eleven feet high, and are mainly covered with fruit-trees, from which good crops are generally obtained. This year fruit is much more plentiful than is general in this part of Scotland, and on the walls a plentiful supply of Apples, Pears, Peaches, Nectarines, Plums, and other fruits has been secured. A notable feature of the fruit walls is one facing almost north, and covered with Morello Cherries, from which splendid crops are derived. Hardy fruits are those most cultivated here, and the walls are thus utilised to the best advantage. Some of the other fruit trees are old, but good crops are the rule.

As with fruits, so with flowers. Outdoor flowers are the special favourites of Lady Selkirk, who has also a preference for the taller and bolder hardy flowers. A number of these have been at Balmae for some time, and some of the older plants are hardly ever met with now in gardens. One cannot detail the flowers at length, but reference may be made to some. There is a fine plant of Eremurus robustus, ten feet high this year, a handsome Romneya Coulteri, a number of good Delphiniums, many Phloxes, Sida Napæa, the old Salvia glutinosa, Phlomises, a great mass of Geranium striatum, covering the side of a bank near the conservatory, and very beautiful indeed; Clematis recta and C. integrifolia, great clumps of Eryngiums, including the fine E. alpinum; Statice latifolia, an extensive collection of Asters, including such as Edna Marcia, Perry's Pink, Perry's Favourite, and a number of other modern varieties, as well as the best of the older. Then there are the species of Asclepias, such Coreopsis as Eldorado and others, Rudbeckias, Inulas, Cimicifugas, Verbascums, a great number of plants of Veratrum viride, giving fine spikes; Monardas, Campanulas, and, in short, a good representation of the best of the border plants; while spring flowers are also in great numbers, including Irises, Narcissi, Snowdrops, &c.

The Shrubs in the garden are both numerous and interesting. The hardy Fuchsias naturally attract attention, as there are enormous plants, such as one of F. gracilis, some eleven feet high in a border and by the wall; and another not so tall, but of huge circumference, and in the open. There are Deutzias, large Berberises, Roses, both old and new, bush and climbing; large old Tree Pæonies, and enormous bushes of Rhododendrons.

Among the trees in the garden, I noted a large Araucaria imbricata, which looks as if it had been among the first of these trees to be grown in this country, and, with a couple of great Yews, is growing by the side of the little lake which occupies a corner of the garden.

A most unusual feature of such a garden is a long walk covered by old Sycamores, planted on either side, and kept pollarded. It goes by the name of the pollard walk, and is a pleasant path in the height of summer, and looks pleasing even in winter. Here we come upon a little grassy glade-like corner with an Arundo and groups of large Rhododendrons, and other shrubs; and anon we wander into another of somewhat similar character, the whole being more attractive because of the undulating character of the ground, which is of a varied contour.

It will not be possible to omit the Sweet Peas, of which there are numbers in lines and in pyramids. These include the best of the newer varieties, and among them a group of a fine-coloured sport from Countess Spencer, which seems to have been fixed by Mr. M'Guffog, the gardener at Balmae. Carnations and early Chrysanthemums are also largely cultivated, with other annuals besides the Sweet Peas.

The glass department is not extensive, but is commensurate with the requirements of the household. The conservatory is well supplied with flowers of the various seasons, and some excellent Begonias, Zonal, and other Pelargoniums, Celosias, and seasonable flowers of various kinds were in bloom. The vineries are well cropped and other indoor fruits and plants well grown.

The vegetables form an important part of the work of Mr. W. M'Guffog, and he has for a long time made a special feature of Onions, which have been looking well this year, as in former ones, when they have taken a high place in competition. Other vegetables are as well done in proportion, and the whole garden presents a number of interesting features. One not seldom seen really lies outside the garden proper, as it is on the outside of the wall occupied by the Cherries. It is ornamented with thousands of plants of the charming Erinus alpinus, which grow admirably in the joints and crevices of the wall. *S. Arnott.*

NURSERY NOTES.

THE ROYAL NURSERIES, WALTHAM CROSS.

THE long-established firm of Wm. Paul & Son is known wherever the Rose is grown for the beauty of its flowers; and probably it is not unknown even in Bulgaria, the home of the Attar of Rose industry.

I was fortunate, on the occasion of a recent visit to Waltham Cross, to find Mr. Arthur W. Paul at home, and having introduced myself, and stated the object of my visit, he courteously conducted me through the home nursery, and furnished enough particulars about the various "new creations" and varieties of the Rose as would have filled, could they have been jotted down as spoken, several pages of this journal; and not alone about Roses, for this home nursery is but a kind of sample ground, where some of the best examples of everything that is cultivated at the branch nurseries may be found. These latter are situated at Loughton and at Broxbourne

The soil of the home nursery is an ideal one, it being a cool, tenacious loam; as Mr. Paul tells his readers in a preface to his catalogue of hardy ornamental trees and shrubs: "The stock is consequently never forced into excessive growth, nor injuriously affected by the most varying seasons. The earth adheres to the roots during removal, thereby almost ensuring success after careful transplantation."

And such I found it to be—friable, even lumpy on the surface, apparently dry, but on scraping a hole with the toe of the boot it was discovered to be agreeably moist below; and yet they had had little or no rain and a brilliant sun overhead for two months. The stocky, moderately strong growth on everything around showed how well a dry season was borne by the trees and shrubs and the Roses. Few nurseries possess a grassy avenue, 20 feet in width, bordered with Conifers and other ornamental trees and shrubs running through from one end to another a quarter of a mile in length. Yet this is the case here, and exceedingly thrifty every plant looked, nothing overgrown as to size, but just as the landscape gardener likes to have his plants.

Roses still flowering in some abundance, with

FIG. 50.—ROSE DR. WM. GORDON: A NEW HP. WITH SATINY PINK COLOURED FLOWERS. (HORT. W. PAUL AND SON).

here and there a variety with nothing visible but the withered glories of a few weeks ago, were the first to which Mr. Paul directed my attention. By the end of September the second flowering of Hybrid Perpetuals, Teas, and Hybrid Teas will be at its best, but let us enjoy the summer feast of Roses while we may. The Wichuraiana Rose, as parent, has made its tween Perle des Jardins and R. Wichuraiana, has large, graceful flowers that are at first lemon-yellow and then white. Its almost innumerable flowers have been succeeded by a heavy crop of seed-pods. Another great pyramid was Deschamps, a Hybrid Noisette, which in two years from a mite in a pot when planted out had grown into a well-furnished specimen 9 feet China, of which many were observed, another Rose like the last, good for beds, is Pissardi, a sub-species of Rosa moschata, flowers semi-double; Eduard Meyer is also semi-double of a light rose tint. On plants of Victor Hugo, a fine crimson-scarlet H.P., many blooms were noted. The fine large blooms of H.P. Her Majesty were noted on dwarf plants one year

FIG. 57.—ROSE DAVID R. WILLIAMSON: A CRIMSON AND RICHLY FRAGRANT H.P. VARIETY (HORT. W. PAUL AND SON).

mark on many of the new climbing varieties Ramblers, as it is now the fashion to name them. The first of Hybrids from Rosa Wichuraiana noted was the very floriferous Dorothy Perkins, Madame Gabrielle Luizette being in this case the other parent. The Farquhar, the result of a cross between R. Wichuraiana and Crimson Rambler. A 10 feet high pyramidal plant of Jersey Beauty, an American cross be- high. Of other climbers may be mentioned climbing Cecile Brunner, an Australian variety of a light pink tint, pretty, more especially when in the bud stage, and flowering with the utmost freedom. Madame Hector Leuilliot (new), a climbing Tea, and very distinct, Madame Moreau, a strong grower, with flowers resembling those of Sunrise, a coppery tint of apricot; Gruss an Teplitz, a brilliant scarlet Hybrid old. The varieties Gustave Piganeau, La France, and General Baron Berge, flowers not unlike those of Geant des Batailles, and a good grower, with a much-branched habit of growth; Jubilee, a grand crimson-coloured Rose, like Prince Camille de Rohan, but flowering with greater freedom. It comes from America. Madame Frau Karl Druschki, the Schnee Konigin of German Rosarians, has been,

and still was, excellent out of doors, the hot, dry season just suiting its needs. Soleil d'Or, a cross raised by Mr. Paul from Antoine Ducher, a red flowering H.P., and Persian Yellow, the colours of the cross being intermediate between those of the parents was observed.

There are several span-roofed houses of larger dimensions containing Roses in pots of Tea and Hybrid Tea varieties, strong plants for winter forcing, which have made fine growth, the process being aided by the removal of all blooms as soon as these appear. Another house was filled with seedlings, whose record as to parentage is carefully noted. Two large houses contained climbing Roses, Ramblers, Teas, and others; one other was filled with such climbing varieties as Lady Gay, apparently the best of this section, so far, Dorothy Perkins, and others. Many plants were observed in pots of the fine Earl of Warwick and Dean Hole. A span-roofed house, 120 feet long, and perhaps 30 feet wide, contained climbing Roses and dwarfs, the latter for forcing in the winter.

Many lights were filled with Roses resting, and among them Etoile de France, a fine large crimson flower—an up-to-date collection, as Mr. Paul remarked on showing them.

Out of doors there was the same abundance of Roses, including numerous climbing varieties ripening their growth, excellent for spring planting. Mr. Paul strongly advising the planting of strong plants out of pots just as these begin to grow in preference to autumn planting. The variety Warrior is greatly liked as a spring forcer; it is a cross from Papa Gontier, a deep crimson flower, and very fine as a bedding Rose. Another that is good for bedding out is the floribunda (Noisette), blush coloured, free, and of moderate growth; it also makes a capital hedge. Hybrid Tea Ireno was noted in the open quarters. The flowers of the palest blush tint come in great heads. H.T. Countess Cairns is of a beautiful shade of pink, a full flower, and the plant very free, as is likewise Mrs. Dudley Cross, with cream coloured flowers, the outer petals having a pinkish tinge. It is not yet in commerce. These four last-named Roses were raised in the nursery, as were the recently-raised Dr. Wm. Gordon, H.P., a pink coloured satiny flower, with very fine petal (see fig. 56), and David R. Williamson, H.P., with deep crimson and richly fragrant flowers (see fig. 57); Pharisaer, a tender blush coloured flower, is a beautiful thing, exceedingly nice in the half-opened stage.

The general stock of fruit trees of all kinds, trained and otherwise, can scarcely be excelled for form, strength, and cleanliness.

Rarities in ornamental subjects are many, and the following may be cited. Cytisus Shipkaensis, a white species, flowering after midsummer; Rhamnus californica, an evergreen, with red Holly-like berries; Gingko biloba pendula; Podocytisus caramanicus (Laburnum), an erect growing, yellow-flowered shrub, as seen about 4 feet in height, the flowers disposed in erect spikes; a weeping form of Betula nigra, quite distinct, Colutea bullata, &c. *F. M.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 64-70.)
(Concluded from page 126.)

WALES.

CARNARVONSHIRE.—Cold north-east and easterly winds, sometimes quite a gale, blowing for nearly six weeks, during which time most of the trees were in flower, account for the scarcity of fruit in our district. The soil in our gardens is of a heavy, retentive nature, overlying limestone. *H. Weaver, Faynol Park Gardens, Bangor.*

——A prevailing east wind in March, April, and May, with severe hail storms which cut the blooms clean off the trees, were the causes of the shortage in our fruit crops. The soil is light in texture, resting on hard rock. *W. Speed, Penrhyn Castle Gardens, Bangor.*

DENBIGHSHIRE.—The cause of the failure in our fruit crops was the cold and frosty spring, with showers in the afternoons and frost in the mornings of most days. Our soil is of a light nature, with a subsoil of sand and gravel. *Walter Weir, Rhosnessney, Wrexham.*

FLINTSHIRE.—Cold winds and frost in May were the causes of a poor fruit season. *John Forsyth, Hawarden Castle Gardens, Chester.*

GLAMORGANSHIRE.—All kinds of fruit trees gave promise this spring of record crops, but owing to the cold winds and little sunshine all through the month of May, Plums and Pears are a total failure. Strawberries were a record crop, but quite half the fruits were spoilt by continued rain and fog during the ripening period. Peaches and Nectarines are very good, and the trees are healthy and free from blister. Apples also are very good, but blight has been very prevalent on the young growths, as it also has been on Plum shoots. All small fruits are plentiful and good, especially Raspberries. Our soil is a light loam, resting on a sub-soil of gravel. *R. Milner, The Gardens, Margam Park, Port Talbot.*

MERIONETHSHIRE.—During the time Pears, Plums, Cherries, Gooseberries, &c., were in full bloom, we registered 8° and 12° frost for two nights in succession, and this ruined the crop. The spring was very wet and cold, with easterly winds, and this was followed by very dry weather. Our soil is a rather light loam, and one that dries quickly. The sub-soil is gravel. *J. S. Higgins, Rhûg Gardens, Corwen.*

MONTGOMERYSHIRE.—No frost of any severity was registered in the early spring, and the trees looked promising and full of fruit buds. An abundant year for fruit was anticipated, but the long and continued east winds blighted the trees so that the fruit all fell off. The soil is stiff loam, with a clayey sub-soil. *J. Lambert, Powis Castle Gardens, Welshpool.*

PEMBROKESHIRE.—The cold and wet of May much injured the fruit crop in this district. In many cases the Apple crop is a failure. All the trees which blossomed in April (which, with us was very dry), such as Pears, Apples, Plums, and Cherries on walls are a good crop. Insects and mildew have been very troublesome this season, and I hold the opinion that they have become much more prevalent of late years. *Geo. Griffin, Slebech Park Gardens, Haverfordwest.*

9.—IRELAND, N.

ANTRIM.—The blossom on all kinds of fruit trees in this district was very abundant, and promised record crops, but the late frost and cold north-east winds account for almost a complete failure of Pears and Plums. Strawberries have been a splendid crop, and all small fruits have been good. Some varieties of Apples are carrying good crops, others have none. May 16 and 17 saw a gale from the north-east, which blackened even some of the young Beech leaves. Our soil is very wet and heavy, on a sub-soil of clay. *J. MacLean, The Gardens, Shanes Castle.*

CAVAN.—The cold east winds in May and the heavy rain spoiled much of the fruit blossom. Royal Sovereign Strawberries have borne an enormous crop of very fine fruits. The soil is a rich loam about 3 feet deep, resting on limestone rock. *Wm. Berry, Farnham.*

DUBLIN.—The causes of a partial failure in the crops of Pears, Plums, and small bush fruits are the sharp frosts, cold winds, and low temperature in April and May. The soil is a good stiff loam, on a hard calcareous bottom about 2 feet below the surface. *A. Campbell, St. Anne's Gardens, Clontarf.*

GALWAY.—I never saw greater promise for fruit than when the trees were in blossom, but Pears and Plums suffered much from severe frosts in April—on the 19th of that month we registered 11° frost. In May the Apple crop also suffered from low temperatures and showers of hail, which also affected the Strawberries and Raspberries. *And. Porter, The Gardens, Woodlawn.*

——Late spring frosts checked growth and brought a plague of aphis, which seriously affected the crops of Plums, Damsons, and small fruits. The soil is a light loam, resting on adhesive yellow clay. *Thomas Dunne, Lough Cutra Castle, Gort.*

MAYO.—The weather in spring-time was unfavourable to all crops. Little growth was made during the month of May owing to frost each night. Potatos are a month late. The soil is loamy; the sub-soil is a hard, yellow kind of clay. *Patk. Connolly, Cranmore, Ballinrobe.*

MEATH.—The fruit crops were almost ruined by the cold weather in spring-time. Such frost was seen in May, that it was like winter. The soil in most parts is a heavy loam. *Michael M'Keown, Julianstown, Drogheda.*

TYRONE.—The persistent frosts and cold weather of March and the first three weeks of April destroyed the Pear and the Plum crops. It had, however, a contrary effect upon Apples, for it retarded the bloom of these trees, and, thanks to a fine, mild May, we have a good crop of Apples. The soil here is rather shallow and cold, of a heavy texture, approaching that of clay. It is deficient in lime, but, when well drained and cultivated, good crops result. *Fred. W. Walker, The Gardens, Sion House, Sion Mill.*

WEST MEATH.—Late frosts, with harsh winds and heavy showers, destroyed the blossoms of our fruit trees and caused many of the young fruits to fall. Both soil and sub-soil differ in parts of these gardens, but for the most we have a medium heavy loam, overlying a cold, yellow clay, the former being very shallow in places. *George Bogie, Pakenham Hall Gardens, Castlepollard.*

WICKLOW.—All fruit trees looked promising in the early spring, and bloomed abundantly, but the fruits were destroyed later by cold east winds during April and May. The soil is gravelly, on a sub-soil of clear gravel. *W. Owen, Powerscourt Gardens, Enniskerry.*

——Apples, Pears, and Plums are an average crop. Black Currants were so infested with the "bud mite" that the crop is a failure. Red Currants and Gooseberries have been an abundant crop, but, unfortunately, owing to the ravages of wood-pigeons (which in our locality are a perfect plague) we shall not harvest many. Raspberries and Strawberries are an abundant crop, and the fruits are very fine in quality. *D. Brough, Coollattin, Shillelagh.*

10.—IRELAND, S.

CARLOW.—The promise of a record fruit year was frustrated by a severe frost on May 10. Daily showers caused much of the Strawberry crop to rot. The soil is a sandy loam of a light texture, resting on a gravelly marl sub-soil. *F. Browne, The Gardens, Borris House, Borris.*

CLARE.—Very unseasonable weather prevailed throughout May, especially about the middle of the month, when we had violent and piercing cold N.W. winds by day and very cold nights. Easterly winds also did much damage, tree foliage being much blackened in consequence. Hosts of green and black fly made their appearance on Plum and Cherry trees. We also had very bad weather during the greater part of April, in which there were cold and violent N.W. winds by day, with frequent light frosts at night. Much damage was caused to early Potatos in this locality from this cause. Sub soil, retentive clay and limestone rock; this applies to the district in general. *Alfred Barker, Carrigoran, Newmarket-on-Fergus.*

Cork.—Seven degrees of frost on April 16 and nine degrees on April 19 destroyed the Damson and the Plum crops on Pyramid and Standard trees. Our soil is a good rich loam on a sub-stratum of limestone. *C. Price, The Gardens, Mitchelstown Castle.*

Kildare.—Crops of Apples, Pears, and all stone fruits are very unsatisfactory. The damage was caused by the severe frosts of April 19, when 13° were registered, and May 11 (12°). The prevalence of east winds during the whole of April and May also adversely affected the crops, while insect pests have not been so troublesome since 1887. Our soil is heavy, and largely impregnated with lime. The sub-soil is a bluish marly clay, which holds water equal to cement and will turn the point of a pickaxe: beds cut in grass fill and overflow with water in winter. *Fredk. Bedford, Straffan House.*

Kilkenny.—We should have had record crops, but for the north winds and late frosts. Fruit growing in this locality is making rapid progress, owing to the encouragement given by the Department of Agriculture. The soil in this district varies from a good loam, with a gravelly sub-soil, to soil of a very sandy nature. *F. France, Bessborough Park Gardens, Piltown, Ireland.*

Roscommon.—Sharp frosts, accompanied by hail and cold winds in April and May, adversely affected the fruit crops. The soil in our gardens rests on a clayey sub-soil, is very retentive of moisture, and generally bad. *Terence Rogers, Frenchpark House Gardens, Frenchpark, Co. Roscommon.*

Tipperary.—The severe weather in April and May spoiled what promised to be a good crop of Pears and Plums. The soil is of a loamy marl; sub-soil stiff, marly loam. *John Doolan, The Gardens, Minella, Clonmel.*

Fig. 58.—Lathyrus violaceus: flowers violet-blue with darker veining.

CHANNEL ISLANDS.

Jersey.—Cold and wet in the spring-time adversely affected the early fruit-blossoms. Apples suffered very badly. Some varieties of Pears, such as Doyenné du Comice and Chaumontel, are carrying good crops. We grow no Plums. Our soil is of good quality, the sub-soil being 18 inches below the surface. *Robert Reed, Spring Grove, St. Lawrence, Jersey.*

Isle of Man.—Late frosts in spring-time and prevailing east winds account for the shortage in our fruit crops. Fruit and all other crops are a fortnight later than in ordinary seasons. Our soil is shelly on a sub-soil of blue and white clay. *Jas. Inglis, The Nurseries, Brunswick Road, Douglas, Isle of Man.*

NEW OR NOTEWORTHY PLANTS.

LATHYRUS VIOLACEUS.

Early in the present season we received flowers of this species from Mr. T. Smith, Newry, whose nursery contains many choice and rare plants. The flowers were produced in a cold house, and Mr. Smith remarked that he did not know whether the species would prove hardy in Newry or not, but from its habit of growing so early in the season he feared it would always require shelter. A note by Mr. Burtt Davy, published in these pages, March 31, 1894, describes the species as coming from the mountains of Los Angeles Co., Southern California.

In the gardens of the University of California, at Berkeley, the plant grows from 6 to 8 feet high and is abundantly covered with light-green foliage (there are about 12 small leaflets to each leaf). The flowers, which are produced in great profusion on racemes bearing 10 to 14 blooms each, are about eight lines long, violet-blue in colour, the banner being veined with darker, nearly parallel veins.

IRIS (XIPHION) TAITII.*

In 1904 my friend the Baron de Soutellinho, of Oporto, sent me bulbs of an Iris which he thought might be those of I. filifolia. They flowered with me at the end of June, 1905, and showed characters which appeared to me sufficient to justify a new specific name. I waited in the hope of confirming my observations by means of the flowers of this year; but, alas! I have had none. So I must trust to what I saw last year.

The plant is obviously not I. filifolia, or any variety of that species: the complete absence of any tube alone shows this, to say nothing of colour and other features.

It is nearly allied to I. Xiphion, but differs (1) in the small bulbs with light-brown finely-ribbed coats, (2) in the form of the outer petal, which is less panduriform and has a narrower "signal," (3) in the filiform leaves, and (4) in the time of flowering, which is later than that of I. Xiphion. Nor have I ever seen any variety of I. Xiphion with the same colouration. By its leaves and late flowering it comes near to I. serotina, but differs in the bulb characters, in the form and in the colour of the flowers.

I think I may venture to consider it a new species, and I propose to call it by the name of the finder, using, however, the more familiar name by which the Portuguese Baron used to be known to his many friends, and so naming it Iris (Xiphion) Taitii. *M. Foster, Shelford, Aug. 8, 1906.*

* Iris Taitii, *sp. n.* Flowering bulbs small (1·5 cm. × 3 cm.) with thin light brown, finely but conspicuously ribbed coats. Leaves, awl-shaped, 40-50 cm. long, four or five to the scape, which they clasp to some extent. Scape about 60 cm. long, the upper 10 cm. being quite naked, bearing (?) a single flower. Spathe valves conspicuous, the outer 10 cm. × 3 cm. much longer than the ovary. Outer sepal (fall) somewhat panduriform, the blade orbicular on a light lavender colour, with thin inconspicuous veins of deeper purple. Apex distinctly emarginate. Signal, a long narrow oval of a bright orange colour, raised in the median line into a distinct ridge. Claw of the same colour as the blade. Whole petal 5·4 cm. × 2 cm. Petal (standard) obovate-lanceolate of a blue-purple colour, much deeper than that of the fall. Apex distinctly emarginate; whole petal 6 cm. × 1·4 cm. Style, with the large quadrate-crenate crests, 5 cm. × 1 cm., of a pale lavender colour. Tube none. Ovary, 3 cm. long by 5 cm. wide, trigonal with concave sides. Peduncle, 4 cm. long. Capsule and seeds not seen. The whole flower is turbinate at first, but expands quite flatly later. It seems wholly without odour. It opened its first flower with me on June 29. It was found a little south of the town of Abrantes in Portugal *M. Foster.*

ORCHID NOTES AND GLEANINGS.

BULBOPHYLLUM LOBBII CLAPTONENSE.

SOME years ago there appeared in Messrs Hugh Low & Co.'s Nurseries, Bush Hill Park, Enfield, a very fine Bulbophyllum which appeared to be so distinct from any other in cultivation that it was provisionally named B. claptonense. More recently it was shown as B. Lowii, the name under which it had been previously exhibited having been overlooked. In colour it resembles a fine variety of B. Dearei, but that species is readily distinguished by the remarkable structure of the labellum, the hinged front of which has the callus merging into the sides of the labellum, which are extended back into the form of the letter U, the extension constituting a very remarkable counterpoise to the weight of the front when set in motion.

In this case the value of a figure of a type specimen is well demonstrated, for reference to the figure of the typical B. Lobbii, *Bot. Mag.* t. 4532, plainly shows Messrs. Low's plant to be a finer form of that species and that the plant so named in gardens generally is very inferior to it in point of beauty and is much nearer in colour to B. siamense (Rchb. f. *Gard. Chron.* 1867, p. 532).

B. Lobbii claptonense differs from the type in its darker, reddish-chocolate markings and in the rose-purple tint of the front of the lip. The habit of the plant is the same as that ordinary B. Lobbii. Scapes erect 4 inches, one flowered, flowers 2½ inches across. Dorsal sepal 2 inches in height, ⅝ inch wide, Indian-yellow in colour with dotted lines of reddish-chocolate, more pronounced on the back than on the inner surface. Lateral sepals lanceolate, falcate, saccate at the base 1½ inches long, ⅜ inch wide, yellow with red-brown lines from base to tip, the outer halves being dotted with red-brown. Lip cordate, hinged, recurved at the apex, whitish, blotched with rose-purple, margin fringed (as seen with a strong lens), callus cushion-like, composed of closely arranged ovoid papillæ, orange at the base, whitish in front, dotted with purple; column whitish with pale-yellow margin and back.

It is a very handsome plant and a form new to gardens.

The B. Lobbii usually found in gardens has the odour of freshly-cut Cucumber. The flower of B. l. claptonense described, seems to have a faint odour like the Cowslip, but this requires verifying.

It flowered lately at Glasnevin and in the gardens of the Hon. Walter Rothschild. *J. O'B.*

A FLOATING ORCHID.

THE August number of the *Orchid Review* has an extract relating to a species of Habenaria (H. repens) found by Dr. Rusby in the delta of the Orinoco. The plant grew in the midst of a floating mass of vegetation, a rhizome about an inch long and one eighth of an inch thick was imbedded among the plants rising obliquely from them, and at the top of this the stem grew erect, in no case much more than 6 inches above the surface. The yellowish white roots well clothed with short and thick root hairs did not dip down into the water, but spread out almost horizontally through the mass of vegetation. The inflorescence was of a light green colour.

THE ROSARY.

THE ROSE GARDEN AT THE MANSE, BRACEBRIDGE, LINCOLN.

(Concluded from page 128.)

MUCH more might be written on other departments of this garden, and especially on that devoted to hardy fruit, but I will merely give a short selection of a few of the best Roses used by Mr. Ellison to bring about such a lovely Rose exhibition as that which I have so faintly endeavoured to describe. The beginner in Rose growing may plant these sorts with all confidence:

HYBRID TEAS.—Florence Pemberton, Antoine Rivoire, Ards Pillar, Augustine Guinoisseau, Captain Christy, Caroline Testout, Climbing Captain Christy, Climbing Caroline Testout, Climbing Kaiserin A. Victoria, Countess of Caledon, Dawn, Gloire Lyonnaise, Grace Darling, Gustave Regis, Irish Glory, Kaiserin Augusta Victoria, Killarney, Lady Battersea, Lady Moyra Beauclerc, Liberty, Madame Chatenay, Madame Jules Grolez, Madame Pernet Ducher, Madame Ravary, Mamie, Marquise Litta, Mildred Grant, Mrs. W. J. Grant, Papa Lambert.

BOURBON ROSES.—Climbing Souvenir de la Malmaison, Reine Olga de Wurtemburg.

TEA-SCENTED ROSES.—Belle Lyonnaise, Hon. E. Giffard, Caroline Kuster, Lady Roberts, Catherine Mermet, Madame Chedane Guinoisseau, Madame de Watteville, Madame Falcot, Madame Hoste, Madame Lambard, Maman Cochet, Marie Van Houtte, Mrs. E. Mawley, Papa Gontier, Prince Theodore Galitzin, Rainbow, Souv. de Catherine Guillot, Souvenir de Pierre Notting, The Bride, White Maman Cochet.

NOISETTES.—Aimée Vibert, Alister Stella Gray, L'Ideal, Longworth Rambler, W. A. Richardson.

HYBRID PERPETUAL.—Ard's Rover, Baroness Rothschild, Bob Davison, Captain Hayward, Charles Gater, Charles Lefebvre, Cleo, Dupuy Jamain, Ella Gordon, Etienne Levet, François Michelon, Frau Karl Druschki, General Jacqueminot, Horace Vernet, La France, Madame Victor Verdier, Margaret Dickson, Marie Baumann, Marquise de Castellane, Merveille de Lyon, Mrs. John Laing, Mrs. Sharman Crawford, Paul Neron, Prince Camille de Rohan, Senateur Vaisse, Thomas Mills, Suzanne Marie de Rodocanachi, Tom Wood, Ulrich Brunner, Victor Hugo, Xavier Olibo.

DWARF POLYANTHA ROSES.—Cecile Brunner, Gloire des Polyanthas, Leonie Lamesch, Madame N. Levavasseur, The Pet.

CLIMBING POLYANTHA ROSES. Dorothy Perkins, Leuchtstern, Queen Alexandra, Wallflower.

CHINA ROSES.—Fellenberg, Laurette Messimy, Queen Mab.

VARIOUS VARIETIES. York and Lancaster, Blairii No. 2, Carmine Pillar, *O. 7.*

The Week's Work.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Spring and Early Summer Gardening.—It is not too late to sow such spring-flowering plants as Myosotis, Wallflowers, Polyanthus, and Daisies, though it is preferable to have sown them earlier and to have the seedlings by this time ready for planting into rows in the nursery. If sown now it will be better to utilise warm frames for the purpose as a little extra heat will hasten their growth and afford protection until they are sufficiently robust to plant out in their flowering quarters. If cuttings of Arabis, Aubrietia, and Alyssum have not been already inserted, a stock can be had by inserting small divisions of the old plants into light soil in the open. They must not be allowed to become dry, and water must be given whenever the weather necessitates it. Dwarf Phloxes, such as P. verna and P. procumbens, may be treated in the same manner. Gentiana acaulis, a delightful plant that succeeds well in a rather heavy soil, should now be increased by division. The tufted Pansy can be propagated in numbers by cuttings. The use of annuals and biennials raised from autumn sown seeds is to be commended. For a continuation of a display of flowers in spring-time when bulbous plants and the other spring flowering subjects above enumerated are over, the present is an appropriate time at which to sow for this purpose, and in doing so care should be taken to sow very thinly in the quarters where the plants are intended to bloom. The seedlings should be thinned out early, so that they may become sturdy and robust before the winter commences. The following are a selection well adapted for this kind of work. Clarkia, Godetia, Eschscholtzia, Leptosiphon, Calendula, Nemophila, Virginian Stock, Shirley Poppy, Centaurea, Phacelia, Linaria, and Limnanthes.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Spring Cabbages.—The first sowing of these vegetables will now almost be ready for transplanting. This is an important item in the successful culture of Spring Cabbages, for if the seedlings are placed 3 inches apart on a well-cultivated piece of ground, they will be in a much better condition when ready for planting in their final quarters than if they had been taken straight from the seed bed. Another sowing should be made for succession and to supplement the earlier sown batch.

Lifting Potatos.—In most gardens it is not advisable to leave the main crop of Potatos for too long a period in the ground, for in soils of a fairly rich nature a sudden rainstorm is often the means of starting the tubers into second growth, after which they are never again in the same keeping condition. I do not consider it necessary to wait until the top growth dies down, but prefer lifting when the skins of the tubers stand the digging process without becoming bruised. Store them in a cool place in a cellar and cover them with any material that excludes most of the air and all the light, otherwise they soon become green and unfit for culinary purposes. Select all the seed tubers at the time of lifting and they will be the better for a few days' exposure in the open, for this will toughen their skins and thus ensure their keeping. All early varieties should now be lifted and stored. Make a note of those varieties that succeed best in the particular garden of the grower.

Leeks.—Leeks intended for show purposes should, by this time, have had sufficient soil drawn to their stems to complete their blanching. It is useless to defer earthing, as is sometimes done, until the show is at hand, in the hope of gaining length of stem. The only result obtained will be a partial bleaching of the lower ends of the foliage, thus doing far more injury than good. Endeavour, in bleaching, to secure a well marked division between the white stem and the green part, and not to allow the one colour to run into the other. Prevent the soil falling between the bases of the leaf-blades, as this is not readily got out, but is retained and clearly shows through the white skins.

Blanching Endive.—The early batches of Endive are growing fast, and blanching will require to be carefully done from now onwards. When the plants are strong, as they should be, and the outer leafage well tied up to a point, perfect etiolation results. The use of inverted flower pots is to be recommended when the plants are not robust. Another good system is to cover the heads with dry leaves, covering a part of the border only at one time in order to ensure a succession. This is certainly the best plan of bleaching later in the season, when frosty nights are prevalent, for then the dried leaves afford protection to the Endive. Watch for decaying foliage on plants under pots, for this often spreads and rots the whole plant.

THE HARDY FRUIT GARDEN.

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

New Strawberry plantations should now be formed, using young plants that were pegged and grown in small 60-pots in good soil. If the beds are intended to remain for two or three seasons the plants should be planted in lines 2 feet 6 inches apart, or they may be placed 15 inches apart each way for the first year; and then, when the first season's fruit is gathered, alternate rows, and every other plant in the remaining row should be removed. This practice is only to be recommended for growers with a limited area and for the purpose of securing quick returns. Plant firmly and do not allow the young plants to suffer from want of water, or they will not build up crowns sufficiently strong to carry good crops of fruits. Royal Sovereign is the variety best adapted for this annual method of culture. In making new beds of Strawberries it is advisable to place the varieties in rotation, according to their season of ripening. Late varieties should have a cooler and more exposed position in order to prolong their season. Label all the varieties prominently. Should the weather prove very hot and dry, a thin mulching of manure will be an advantage, for it will help to check evaporation of moisture. Amongst the

many varieties now in commerce, the following I have found succeed well; but it must be remembered that varieties differ according to localities and to the nature of the soil: Royal Sovereign, Fillbasket, Givon's Late Prolific, Waterloo, President Loubet, Sir Joseph Paxton, Climax, Monarch, and British Queen. Givon's Late and President Loubet have been excellent with me this season. Alpine Strawberries should now be furnishing good supplies of fruits, and the plants must be afforded plenty of moisture at their roots.

Autumn Fruiting Raspberries.—These must be afforded moisture at their roots and have their canes thinned in order to strengthen those left for fruiting. As soon as the Raspberries begin to ripen, nets must be placed over the plantation, or the birds will soon take all the fruits.

Fruit Gathering.—Proceed to gather all the fruits that are ripe and store them in the fruit room. When all are gathered, the trees should receive a good cleansing, using a wash of petroleum or nicotine soap. This operation must be done effectually, and several applications may be necessary to perfectly free the trees from pests.

Watering.—Up to the present (August 17) very little rain has fallen in this district. The weather has been exceedingly hot, and this with a drying wind has entailed a lot of watering amongst the fruit trees. A sufficiency of water is of the utmost importance in fruit-cultivation, especially where the trees are planted on walls, raised borders, &c. Trees that have fair crops of swelling fruits must be watered often and well; small quantities will not suffice.

Nets may now be removed from the main plots of Gooseberries and Red Currants, and the soil should be stirred and freed from weeds. See that the later fruiting bushes on north borders and on walls receive protection from birds and from wasps. All these latter insects should, as far as possible, be destroyed. Hunt out their nests and pour in a quantity of cyanide of potassium dissolved in boiling water. This dangerous poison must be labelled POISON, kept tightly corked, and placed under lock and key, and only entrusted to competent and responsible persons.

Young Fruit Trees that were planted late should receive every encouragement to enable them to complete their growth. See that they are well watered and the ground about them well stirred. This also applies to plantations of bush-trained fruit trees. Stirring the surface fills up the interstices in the soil and prevents excessive evaporation of moisture. All fruits when gathered should be taken to a cool fruit room.

THE ORCHID HOUSES.

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

Miltonia vexillaria and its varieties.—Plants that have commenced to grow should be examined to see it any of them require repotting. Those in a healthy state, in pots of suitable size, and in which the compost is still in a good condition, need not be disturbed, but can be left until the early days of the New Year before being disturbed. A little of the old sphagnum on the surface should, however, be removed, and some fresh living moss substituted, for this will serve as a guide when watering. Some plants may have deteriorated through excessive flowering, or from other causes; and, if they have started to grow, will require immediate attention. Turn the plants out of their pots, remove all the old compost, cut off all dead roots and decayed parts, and at the same time look carefully underneath the pseudo-bulbs for wood lice, as many of these insects are frequently to be found concealed amongst the old roots. Select pots or pans much smaller than those the plants have hitherto occupied, and three-parts fill them with drainage, over which place a thin layer of rough sphagnum moss, and then a compost consisting of three parts sphagnum-moss to one part of peat, with a little leaf soil, adding moderate quantities of small crocks and coarse silver sand, and mix the whole well together. After re-potting, water should be afforded the plants very sparingly through a fine rose-watering can, or through a fine sprayer, for only sufficient for the sphagnum to grow will be needed. With proper care, by next spring these unhealthy-looking plants will require repotting into pots at least two sizes larger than those they have occupied; keep them well shaded from sunshine until new roots are seen pushing their way through the compost, for much exposure to strong light, while they are practically rootless, will soon cause the pseudo-bulbs and leaves to shrivel. The temperature of the cool house will suit M. vexillaria until the nights become chilly, when the plants should be taken back to their former quarters in the intermediate house, and where air is freely admitted at all times. The late summer-flowering varieties, as M. v. rubella and M. v. superba, are now quite at rest. M. v. Leopoldii is in flower. All these varieties will require similar attention to that described above when growth commences afresh. The distinct hybrid M. Bleuana and its variety nobilior is in full growth and may, if necessary, be potted. It succeeds best throughout the year in a shady corner of the intermediate house.

Angræcum falcatum is now flowering in the cool house. Its small, pure white flowers emit a sweet, delicate odour, and it is well worth growing for its fragrance alone. The plant should be grown in a well-drained shallow pan, with a thin layer of sphagnum-moss to root in. It should be suspended in a shady part of the house, and should never be allowed to become dry. Promenæa citrina, P. stapelioides, and P. microptera are flowering in the same house. Being dwarf-growing plants, they should be suspended in a similar manner to the Angræcum, and be treated in every other respect in the same way as that plant. They succeed best in well-drained peat and sphagnum-moss.

Dendrobiums.—Many of these plants are now completing their season's growth, and any which are making their terminal leaf should be removed to that end of the house where plenty of air and light can be admitted, so as to prepare them for removal to cooler quarters. Afford plenty of water at their roots and well syringe the foliage on bright sunny days, so as to produce strong, plump, flowering pseudo-bulbs.

Thunias may now be placed out of doors in full sunshine in order that they may consolidate their growths and become gradually ripened. They will still require water until the leaves change colour, when moisture should be withheld altogether.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

The Fernery.—Overhead syringing of the plants should now be discontinued, and the sun-blinds should in most cases be removed to allow a moderate amount of sunshine to reach the plants, for this, with an increased amount of ventilation, will mature and harden the fronds, rendering them the better for use in a cut state in the winter months. Adiantums which have been placed in the cool conservatory, or which have been used for decorative work in the residence, and whose fronds in consequence have become untidy, should be defoliated (after being kept somewhat dry at the roots) and then be returned to a shelf in a warm house, where they will again grow strongly and furnish new fronds before winter, at which season they will be serviceable for room decoration.

Souvenir de la Malmaison Carnations.—As soon as the layers of these plants have become rooted sever them from the parents, and in the course of a few days pot them into 4-inch pots, using a compost of good loam, leaf-mould, sand, bone-meal, and old soot. Shade the newly-potted plants from bright sunshine until the roots become active, and afford water very carefully. A weekly spraying with some fungicide such as "Carvita" will keep the plants free from fungoid diseases.

Fuchsias trained to rafters.—These plants are never seen to better advantage than when growing up the rafters of a greenhouse or a conservatory. Cuttings for this purpose should be rooted forthwith and be kept growing all through the winter. The plants must not have their leading shoots removed, but all side growths must be taken away as they appear, and this must be done until the plants have reached the bottom of the rafter, after which the development of side branches should be encouraged. A substantial and lasting compost of good loam, dried cow manure, leaf-mould, with added sand and bone-meal, should be used for their planting. By following this plan the rafters of the house will be clothed with a profusion of richly-coloured pendulous flowers and bright green leaves such as are produced by few other plants.

Coleus.—Cuttings of these decorative foliage plants should be rooted singly in small pots in the propagating pit, and when they are rooted they should be hardened off by placing them on a shelf near to the glass in a moderately warm house. Cuttings inserted after this date often root unsatisfactorily and they do not winter so well as earlier rooted plants. The soil used in their propagation should never contain manure, for if it does, the rich colours of the foliage will be entirely absent during the dull days of winter.

General Remarks.—Cuttings of Petunias, Zonal and Ivy-leaved Pelargoniums, Fuchsias, Heliotropes, and Abutilons should now be inserted. Old worthless plants of these subjects should be thrown away; their pots will be useful for growing early flowering bulbs such as Roman Hyacinths, Freesias, Narcissus, &c. Cyclamen seeds, when ripe, should be sown forthwith, they should be dibbled into seed pans or pots, 1 inch apart and ½ inch deep, and the pans placed in an intermediate temperature, which will be sufficient for the seeds to germinate.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Late Muscat Grapes.—It is desirable to have these Grapes in condition for as long a period as is possible, as they are always in demand, and especially the White Muscats. To keep them well, it is essential that the bunches be perfectly finished. The lateral growths should not be allowed to become crowded, and if a few only of these are removed each day, the vines will not receive any perceptible check. Some of the leaves may be tied back from bunches around which the foliage is very dense, but not so as to expose the berries to the full effects of the sun's rays or they will soon become brown, and so disfigure them. It is important that the foliage be kept in a healthy condition; precautions must therefore be taken to prevent the leaves becoming scorched. If the sun's rays are excessively hot, a garden net thrown over the glass will greatly benefit both the vines and bunches. The borders must be properly watered, for neglect in this matter will be fatal to long keeping of the bunches. Stimulants will not be required after the berries begin to colour. Outside borders situated in wet, low-lying districts must be protected from excessive rains. They should be covered with boards or with covers made of zinc. This will greatly assist the Grapes in keeping, and will help them to retain their flavour.

Figs.—Trees that are growing in permanent borders, and which are carrying a second crop of fruits, should be given every encouragement to perfect them. They should be liberally supplied with moisture at their roots, and they should be vigorously syringed in the morning and in the afternoon, in order to keep down attacks of red spider. The shoots, especially strong growths, should be regularly stopped; suckers from the base of the trees must be removed entirely, for they rob the other parts of the trees of much nourishment, and sometimes even cause the fruits to drop. The earliest pot Figs that have finished fruiting may now be taken in hand for repotting should they require it. If they are growing in large pots, the soil and roots forming the "ball" must be reduced and the plants be repotted in pots of the same size, provided with plenty of drainage, using a compost of fibrous loam and old lime rubble, with some bone meal added. Plunge the pots in ashes in the open after potting, and syringe the trees twice daily during dry weather.

Figs in Cool-Houses.—Trees that are now in bearing in structures where there is no means of artificial heating should receive every advantage of the sun's heat, and the houses should be closed early in the afternoon, in order to send the tempearture up to 75° or 80°. Borders in which are growing trees that have finished fruiting, and which appear to be in a sour condition, should be seen to at once. Commence lifting the roots at a distance of about 2 feet away from the main stem, and cut back any strong roots as the work proceeds. Replace the sour soil with new compost, that should be rammed very firmly. Syringe the trees as recommended above for pot Figs.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Aug. 25	Gateside Fl. Sh. Gatehouse Fl. Sh. Hawick Fl. Sh. Nat. Co-operative Fl., Fruit and Veg. Sh. at the Crystal Palace.
TUESDAY,	Aug. 28	Roy. Hort. Soc. Coms. meet. Oban Fl. Sh.
WEDNESDAY,	Aug. 29	Bath Floral Fête (2 days). Lanark Fl. Sh.
THURSDAY,	Aug. 30	Stirling Fl. Sh. (2 days).
FRIDAY,	Aug. 31	Campbeltown Fl. Sh. Carluke Fl. Sh.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—60·6°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, August* 22 (6 P.M.): Max. 88°; Min. 63°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, August* 23 (10 A.M.): Bar., 30·1; Temp., 70°; *Weather*—Fine.

PROVINCES.—*Wednesday, August* 22 (6 P.M.): Max. 80° Bury St. Edmunds; Min. 56° Scotland north.

SALES.

MONDAY—
Dutch Bulbs in large variety, at 67 & 68, Chapside, E.C., by Protheroe & Morris, at 10.
TUESDAY— Ditto.
WEDNESDAY— Ditto.
THURSDAY— Ditto.
FRIDAY— Ditto.
FRIDAY—
Imported and Established Orchids from various sources, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

School Gardens.

Many and varied are the branches of instruction undertaken by the various committees charged with the administration of technical education up and down the country, but we doubt if any subject taught is of greater, or even of equal utilitarian value, to that of gardening. At the end of the session the students have something tangible to see as the result of their labour and instruction. No one will deny that good work has been done in fostering a love of the craft among cottagers and allotment holders, for one has only to visit a show such as we recently attended to see the extraordinary produce of fruits, flowers, and vegetables, from allotment grounds. Similar instruction is now being, in many cases, extended to the elder boys in the village schools, and the establishment of school-gardens, such as we warmly advocated many years ago, but at the time with little effect, is now rapidly developing. One of the most active counties in this direction is Hertfordshire, whose Agricultural Education Sub-Committee has done much to advance this important subject, and in various places in the county are established school-gardens for boys between the ages of eleven and fourteen years attending the elementary schools; and also plots for older lads who are attending evening schools. The scheme is supervised by a staff lecturer, Mr. A. E. Burgess (formerly connected with the Essex County School of Horticulture), and he is assisted by several sub-instructors. In order to help forward the work special classes in horticulture and botany are established for school-teachers (many of whom, it is well known, are first-rate cultivators), so that they themselves may lend a hand in the work of instruction. The rapid increase in the work, however, has made the appointment of an additional instructor necessary, and during the present year, Mr. J. H. Walker, of Leicester, has been appointed to the western side of the county, where he has already several school gardens at work. In all the centres the boys have separate plots and the county provides tools, toolhouses, and sometimes seeds. The boys are, subject to certain restrictions, allowed to appropriate the produce of their individual plots.

One of the most important centres of the work is Cheshunt, where it was our pleasure recently to inspect the gardens, and to see the boys at work. The local council of Cheshunt has acquired a large house and grounds—the Old Manor House—for Urban District offices, etc., and the garden afforded an ideal spot for the scheme. About one acre of this garden is rented by the Technical Authorities, and it has been stocked with trees and flowers, largely through the generosity of Mr. George Paul, who takes a keen interest in the movement. Four schools take part in the work of this garden, and the number of boys attending each week is over one hundred. Each lad receives one and a half hour's instruction, somewhat as follows: Three-quarters of an hour in the Technical School attached to the ground, where he is taught the principles of horticulture, and three-quarters of an hour practical work and instruction in the garden. The garden is divided into several sections, viz., (a) General plot, consisting of flower-borders and fruit and vegetable quarters. Here the lad receives a preliminary training before being apportioned a plot to himself; (b) school plots: there are four of these, and each is divided into fourteen smaller plots, one for each boy. For the school with the best quarter is offered a Challenge Shield, presented by the nurserymen of Cheshunt. It has been won this year by the Cheshunt British School. (c) beds for the inclusion of plants of the more common families; (d) an orchard-plot, containing Apple, Pear, Plum, Medlar, Quince, and Cherry trees. These trees have been trained in various ways. More than 50 have been grafted or budded, either by the students themselves, or by the instructor for demonstration purposes. The boys can thus watch the development of a tree from the bud or graft to its final shape. The seeds are provided by the local Education Sub-Committee. The vegetables, fruit, etc., from the general plot are sold, a goodly portion being purchased by the parents of the lads attending the class. The produce of the four school gardens is, as stated, taken by the boys themselves, subject to the payment of a small sum, and they may dispose of it as they wish. No lad, however, is allowed to remove anything before it has been valued by the instructor and entered in a note-book. Thus, the boys are taught the value of a crop as well as the manner of producing it. The fifty-six plots were each carrying the same crops—Beans, Lettuce, Potatos, Carrots, Beet, Onions, and Parsnips. A crop of Peas had just been harvested, and the boys had made more than sufficient from the sale of these than the amount of their fees. The size of each plot is about thirty square yards, although in some of the centres they are from thirty-six to forty square yards. In bad weather the lads assemble in the potting-shed, where they are given suitable work.

The gardens are also used for demonstrations to the public and to the pupils of the evening classes. Cheshunt and district should be congratulated on having in their midst such a man as Mr. George Paul, to whose energy and influence the establishment of technical horticulture in the district is largely due, and through whose generosity many acceptable plants and trees have been added to the garden.

We take this opportunity also of alluding to

[*Photo by A. E. Burgess.*

FIG. 59.—A LESSON ON TRAINING FRUIT TREES IN THE SCHOOL GARDENS, CHESHUNT

the flower-beds, designed, laid out, and planted by the boys in a reformatory near Droitwich. Mr. Udale, a highly competent judge, tells us that he has visited these gardens at intervals during the last four or five years, and has been impressed with their design and the excellence of their upkeep. The soil is ordinary gravel and the gardens occupy one end of the play-ground. The designs are worked out with pebbles.

The gardens are destroyed each winter and the boys draw new designs, which are again laid out each spring and planted on the approach of summer.

The whole of the work is done by the boys without any assistance in drawing or anything else, and without any supervision.

The farm consists of about 70 acres, with workshops. Many are taught gardening, the senior boys taking the responsibility (under their foreman) for certain crops of fruit and vegetables, and each senior boy has a squad of juniors under his control. Some of the boys are taught tailoring, others boot-making. Judging from the photographs sent us by Mr. Udale, the plots are creditable to all concerned, although they show that imitation is freely practised and that a greater degree of originality should be encouraged. Several photographs were sent us; the one we reproduce is a good typical representation, not the best in our judgment, but the one most suitable for reproduction in our pages.

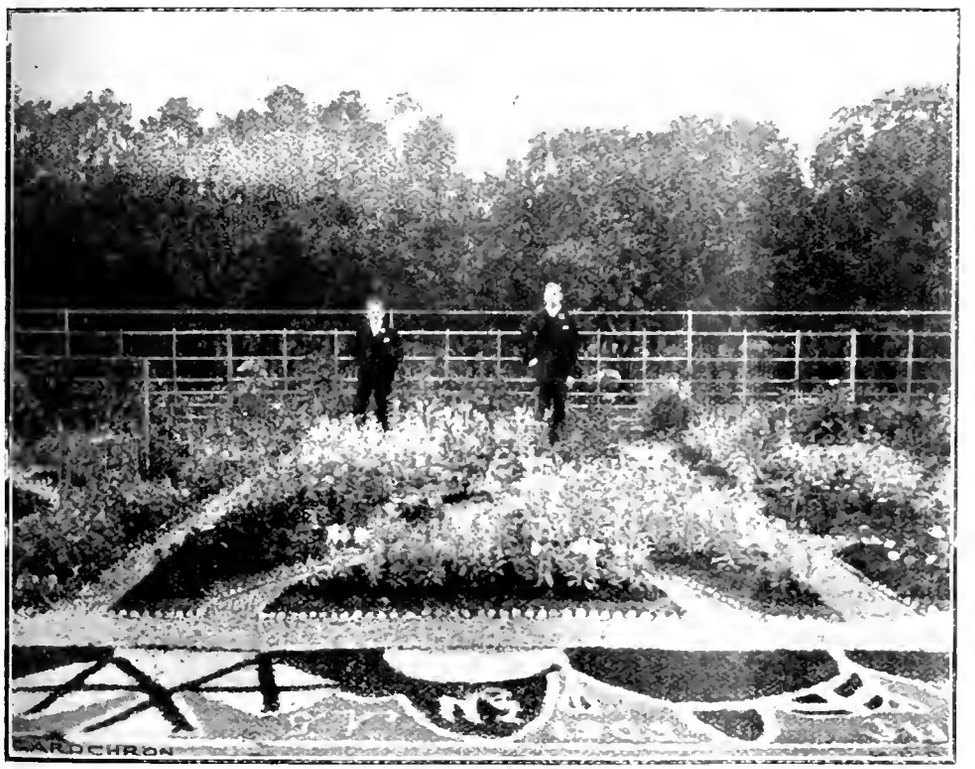


Fig. 60.—A school garden near Droitwich.

Our Supplementary Illustration (*Sobralia Amesiae* ×).—There seems to be some diversity of practice in writing the name of this plant, for whilst some write it Amesiae, as if the lady had in some way taken part in the production or introduction of the plant, others give it the complimentary name Amesiana, which leaves us in doubt whether the compliment was intended for the gentleman or for the lady! In Sanders' Orchid Hybrids, p. 115, S. Amesiae × is stated to be the product from S. xantholeuca crossed by S. T. Wilsoniana. Be this as it may, the plant is an interesting one from the peculiarity of the colouring of its flowers, which may be described as pale-buff flushed with rose. Mr. Worthington Smith's drawing was taken from a plant exhibited by Major Holford at the Horticultural Society on July 17 last.

Royal Horticultural Society.—The next meeting of the Royal Horticultural Society will take place on Tuesday, August 28. A lecture on "Meteorology in its Relation to Horticulture," illustrated by lantern slides, will be given by Mr. R. H. Curtis, F.R.M.S., at 3 o'clock.

The Royal Horticultural Society's School-Teachers' Examination in Cottage Gardening.—This annual examination of teachers in elementary schools in practical gardening knowledge took place at various centres on April 11 last. The results, as furnished by the reports of the examiners, Messrs. J. Hudson and A. Dean, show 156 passes in the three classes of excellence. In the first class are ranked 46 candidates, in the second class 58, and in the third class 52. Nothing is said as to sex or numbers of marks awarded to each candidate. The lists, arranged in order of merit, show the positions of the respective candidates. As usual, certain schools of gardening figure in the list, Swanley College having four students, all well up in the first class. Then come the County Technical School, Stafford, and the Essex and Middlesex Schools of Horticulture. These four various schools or colleges place nine candidates in the first class out of 46, 15 in the second class out of 58, and in the third class 17 out of 52, thus securing 41 passes out of 156. It is interesting to note, therefore, how many home-trained candidates have passed.

Winter Flowering Carnation Society.—A Committee meeting of this newly formed society will be held on Tuesday, August 28, at the Hotel Windsor, when the schedules and prize list of the first show will be considered. The committee appeal for help to enable them to offer suitable monetary prizes, and invite suggestions from persons not attending the meeting. The time and the place for holding the first annual exhibition is not definitely fixed, but it is suggested that the show shall be held early in December. The Hon. Sec. is Mr. Hayward Mathias, Roedown House, Medstead, Herts.

Co-operative Flower Show at the Crystal Palace.—The Co-operative Flower Show at the Crystal Palace to be held this day promises to be most successful. Upwards of 2,000 exhibits will be sent in by nearly 250 exhibitors. Many of these exhibits will be from working men.

Sale of Imperial Orchids.—It is announced in the *Evening Standard* that on or about October 1 a sale will be held in Vienna of a large surplus of very fine and rare Orchids from the imperial conservatories of Schönbrunn. Amongst them are some unique crosses and hybrids which will be likely to arouse keen competition.

Dr. Wilhelm Seelig, for many years vice-president of the German Pomological Society, died at Kiel on July 30 in his 86th year. The deceased was a native of Cassel and studied jurisprudence in Heidelberg, Berlin and Marburg. In 1871 he was elected to the Reichstag, and in 1873 as a member of the Prussian House of Parliament. He greatly interested himself in fruit culture, and was appointed deputy president of the above-named society, an office that he filled for many years; in 1899 he was made honorary president. He was founder of the Schleswig-Holstein Central Society for Horticulture and Fruit Culture.

A New Natural Order. The discovery of a new or heretofore unrecognised natural order is an event nowadays. It has fallen to the lot of Mr. W. B. Hemsley to differentiate such a group under the name of Julianaceæ, which consists of two genera and five species. Juliania is a Mexican genus of resiniferous trees with pinnate leaves and dioecious flowers. The other genus, Orthopterygium, is Peruvian. There are resemblances to the Anacardiaceæ, and to the Cupuliferæ, but Mr. Hemsley, in a communication to the Royal Society, places the group between the Juglandaceæ and the Cupuliferæ.

Plant Protection from Insects and Fungi in Saxony.—In connection with the Lead office for plant-protection in the Kingdom of Saxony, an enquiry office has been established at Dresden, to which the owners of gardens, and especially nurserymen and florists, may apply for information, and from which replies to enquiries will be made, free of charge, concerning fungi and insects injurious to plants. Gardeners are invited to send plants infested with insects or vegetable parasites, by sample post-packets, post paid, together with particulars in reference to the methods of cultivation, extension of the malady, and cause of the same, to Dr. Arno Naumann, the assistant in the experimental station for vegetable physiology, the Royal Botanical Gardens, Dresden.

Retarding Lilies of the Valley.—An English correspondent of the *Weekly Florist's Review* writes that the mistakes and consequent heavy losses in reference to the right and wrong way of retarding Lily of the Valley were very forcibly demonstrated to him lately. A batch of a million was ruined through being improperly retarded in one of the public cold stores. They had been kept at a regular 38° during the whole time, but the atmosphere was simply dry, cold air. What this plant requires is 1° to 6° of warmth, with an atmosphere that is continually more or less making ice. It should never be forgotten that there is a difference of fully 5° in the effect of moist and dry frost on both vegetable and animal life, and one of the greatest items toward success in retarding Lilies is to put them in an atmosphere heavily laden with moisture. Lilium longiflorum and other Japan Lilies will not successfully retard in a moisture-laden atmosphere.

Attempted Poisoning in British Guiana.—A Reuter message from Georgetown, British Guiana, dated July 28, states that the colony has been deeply stirred by an attempt to poison Professor J. B. Harrison, Director of Science and Agriculture and Government analyst, and with him the whole of the laboratory staff. In June Professor Harrison was incapacitated by a mysterious illness, which recurred in spite of skilled treatment. About the same time the laboratory was more than once entered by some unknown person at night. Some samples were stolen and others tampered with. The burglars were apparently possessed of duplicate keys. On July 5 Professor Harrison, after drinking several glasses of iced-water from the can in his private office, was seized with headache, giddiness, and nausea. He was compelled to leave work and go home, where he was confined to bed. Meanwhile the assistants at the laboratory and the messenger developed similar alarming symptoms after drinking iced-water from the reservoir. On the Monday it occurred to Mr. Garraway that their illness might be due to poison, and an inspection of the water receptacles showed that enough "Rough on Rats" had been placed therein to poison hundreds of people. Fortunately all the victims have nearly recovered by now, but Professor Harrison has been so ill that he has been ordered a complete change, and will probably leave the colony shortly for a prolonged holiday. So far no clue to the perpetrator of the outrage has been found.

A New Disease on New Zealand Veronicas.—We learn from a communication in the *Oesterreichische Garten Zeitung* for August that a species of fungus has been observed on Veronica speciosa and its varieties which works great havoc with the plants in the horticultural school at Eisgrub, in Moravia. It is Septoria exotica. During the summer the fungus is to be met with only occasionally, but it develops rapidly in autumn and winter when the plants are under glass. The fungus appears as small grey spots, 1-2 mm. in diameter, and specially visible on the under side of the leaves, where their presence is distinguishable from the surrounding tissues by a raised, thick line. The patches grow constantly lighter in tint, till in the course of 2 to 4 weeks they become quite white, and the leaves crippled. On these white patches there appear black spore cases, in which a great number of spores are developed. The crippling of the leaves is followed by their fall, even when the infection is merely slight, and the previously bushy plant assumes a naked appearance with but few leaves remaining. The fungus has been observed in Argentina, Italy, and Berlin. The application of the ammoniacal copper-soda mixture is recommended as a remedy.

The Influence of the Graft on the Rooting of the Pear.—The question of the influence of the grafted ennobled variety on the wilding or other kind of stock has not of late years been so much discussed by cultivators or pomologists as it deserves to be, more particularly for standard trees. There are certain varieties of Pears which, under the most diverse conditions of soil and climate, exert a great influence on the root system in the direction of increasing considerably the number of the roots. As is well known, the Pear trees which make weak top growth and spare foliage are mostly deficient in roots, but this unsatisfactory state of things can be entirely averted and altered for the better by the employment of a freer-growing variety as first graft or bud, upon which any desired variety may be worked the following year, a practice commonly followed in fruit nurseries with certain varieties of Pears that are worked on the Quince stock. Perhaps some of the readers of this note will kindly communicate facts touching on this interesting subject, not exclusively confining them to the Pear.

Threatened Destruction of Bostall Woods.—Mr. A. D. Webster writes:—"This beautiful Pine woodland, near Plumstead, has been sadly damaged of late years by the ravages of the Pine beetle (Hylurgus piniperda). Fully five years ago I pointed out in the *Timber Trades Journal* the then threatened destruction, and suggested means of coping with the evil, but nothing was done. Since then many fine trees have been killed out and others are in imminent danger of succumbing to the attacks of this dreaded pest of our woodlands. Not only should the dead and dying trees be at once cut down, but all woodland *débris*, including fallen branches and the roots of trees which have been left in the ground, must be destroyed. The life history of the insect teaches us much regarding the best methods of destruction or, at least, of keeping it in bounds."

White Ants Beaten at Last.—It is announced that the great scourge known as white ants or termites, which destroy so ruthlessly all descriptions of woodwork, from railway sleepers to household furniture, in tropical and subtropical lands, can now be effectually dealt with, as, by a newly discovered process, any wood can readily be rendered impervious to their attacks. Attempts have been made hitherto to combat these pests by various means, but until now either the means have proved unsuccessful or the odour of the preservative used has been so pungent as to preclude its employment for constructional timbers or for furniture. It has been claimed that some woods, such as Indian Teak, Australian Cypress, Pine, and Turpentine Wood, in their natural state are more or less immune from attack, but the evidence in favour of their total immunity is often so contradictory that the conclusion can only be drawn that much depends on the ground in which the trees are grown, and the species of termite to whose voracity the wood is afterwards exposed. Mr. Saville Kent points out in his very able chapter on Australian Termitidae that Jarrah (Eucalyptus marginata) grown on the Ironstone ranges is practically proof, while that grown elsewhere is by no means so. Again, some species of white ants display a decided preference for certain woods; for instance, the Calotermes domesticus of the Malay Peninsula, while rarely touching woods of a piney or resinous nature, readily attack other timbers, especially those grown locally. An illustration before us represents two pieces of ordinary yellow deal, a most toothsome morsel to nearly every variety of white ants. These pieces were bolted together, and placed by Mr. H. N. Ridley, Director of the Government Botanical Gardens, Singapore, some months ago in a position where termites abounded. The untouched piece had been treated in London by the Powell wood-process with a termite-resisting solution, which is absolutely odourless and innocuous except to insects, while the other was left in its natural condition. The latter has been almost entirely consumed, while the former remains intact. The specimens were removed before the natural piece had been entirely consumed, as had been the case in other places. This discovery is naturally of great importance to dwellers in the tropics, and especially to timber merchants, furniture manufacturers, &c., who trade with tropical countries, for merchants will now be able to guarantee all prepared wood against destruction by termites. Curiously enough, the process, which only occupies a few hours, actually improves the appearance of the wood, which at the same time is effectually seasoned and rendered proof against dry rot and similar fungoid growths. The cost, too, is said to be low. Particulars can be had free from the Secretary, Powell Wood-Process Syndicate, 28, Fleet Street, E.C.

Influence of the Stock upon the Scion.—Continuing their investigations upon the results produced by grafting in various ways, MM. G. Rivière and G. Bailhache contribute a further paper on the subject to the *Comptes Rendus* for April 2. Their past researches bore special reference to fruit trees, and were chiefly directed to the different effects upon the Pears Triomphe de Jodoigne and Doyenné d'hiver, produced by grafting them upon the free-stock and upon the Quince. The more recent experiments were made with Apples, to see if, with these, as with the Pears, the exterior characteristics as well as the chemical composition were modified according to the stock upon which they were grafted. In 1905 the investigators made an analysis of ripe Apples of the variety Calville Blanc gathered from trees grafted, some upon the Paradise stock, others upon the Doucin. All these trees were of the same age (14 years), and growing under identical conditions. They were planted side by side in the same plot and trained in the same form; further, the wall against which they were growing faced the east. Neither the composition of the soil, the aspect, nor the age of the trees by which the size and quality of the fruits are generally influenced could affect them in the new experiments. The stock could be considered, under these circumstances, as the sole factor capable of exercising any influence on the graft, and above all, on its developments. The results obtained are summarised thus: 1. The average weight of Apples gathered from Calville Blanc, grafted upon the Paradise stock, exceeded that of fruit of the same variety grafted upon the Doucin. 2. The proportion of free acid (represented as sulphuric acid) was greater in the juice of Apples grafted upon the Paradise than in that of these fruits on a plant grafted on the Doucin. 3. The proportion of ash is higher in the juice of fruit from trees grafted on the Doucin than in that of fruit gathered from trees grown on the Paradise. 4. The proportions of glucose and reduction-sugar, and of saccharose, are notably greater in fruits of Calville Blanc grafted on Paradise than in those of the same variety from trees grafted on the Doucin. Therefore, these experiments plainly confirm those published in 1897, and seem, further, to demonstrate that not only do the dessert Apples contain more sugar in each litre of juice than do the Pears, but also that they contain more saccharose and more free acid.

Fruit Culture in Gloucestershire.—The annual report of the Lecturer on Horticulture to the Gloucestershire County Council (Mr. G. H. Hollingworth, F.R.H.S.) states that the applications for lectures last winter were so numerous that a large number had to be placed on the reserve list. There is, he says, no lack of evidence to prove that Gloucestershire is naturally adapted for fruit culture, and the many old orchards in the county indicate that the possibilities in this direction were fully realised by a generation of growers in the past. Some ground has doubtless been lost, but the outlook is hopeful, and agriculturists are becoming alive to the fact that if the orchard is to be made profitable it must have the same care as is bestowed on any other department on the farm. Every year, thanks to the instruction given by the County Council, growers realise more and more the necessity of planting good trees of recognised varieties, keeping them clean, and attending to the important items of pruning, protecting, and manuring. Hundreds of trees have been planted during the past winter, and hundreds of others, planted previously, are coming into a state of bearing. In due course the result of this awakening up must be seen, and he hopes Gloucestershire will uphold its time-honoured reputation as one of the leading fruit-growing counties in the West of England.

Willows.—The difficulty of determining the species and varieties of Willows is well-known to all who have made the attempt. The labour will be much facilitated by a publication of which we find mention in the *Bulletin* of the Botanical Society of France (1906), p. 412. It appears that Mdlle. A. Camus and M. G. Camus have just published a list of all the European species and varieties, with analytical tables and illustrations. Anatomical characters are made use of for purposes of discrimination such as the presence or absence of stomates on the upper surface of the leaves, the form of the midrib as seen in section, the presence or absence of wax in the rind of the branches, the structure of the vascular bundles, and of the pith and other points serviceable in the laboratory, but not adapted for use in the field. Very numerous hybrids and some of complex origin are described.

"The Garden, You, and I."—By Barbara, Author of "The Garden of a Commuter's Wife," &c. (New York: The Macmillan Company. London: Macmillan & Co., Ltd.). We can recommend this book to all who like to read about other people and their gardening experiences, "Barbara" writes pleasantly of her American home and her plantations, and her remarks may prove useful, though we agree with her that "one must live the outdoor life of her own locality to get the best results in a garden." The title of the book is awkward, and it takes some time to understand that "You" is a female friend of the author, introduced to serve as a convenient correspondent, sending and receiving long and rather wordy letters about gardens and miscellaneous matters also. The private affairs of the characters have no horticultural interest, but readers for this class of book appear to be insatiable, so should appreciate the present volume and admire the illustrations. There is no doubt as to "Barbara's" fondness for gardening, and she tries to be of practical use, and has drawn up a list of hardy seeds and worthy annuals.

Experiments with Calcium Cyanimide.—In the July number of the *Journal of the Board of Agriculture* Mr. A. D. Hall details the results of experiments with calcium cyanimide used in 1905 at the Rothamsted Experimental Station for Barley and Mangels. The new manure is obtained by effective combination of calcium carbide with the nitrogen of the atmosphere. As regards Mangels, the seed was Yellow Globe, sowing taking place on May 10. The seed grew well from the start, and there was an even plant with no misses. The crop was lifted on October 20th. "Taking the results together and also considering those obtained in 1904, it is clear that the nitrogen in calcium cyanimide is practically of the same value as that in sulphate of ammonia. There is a slight balance of evidence in favour of the sulphate of ammonia, which is chiefly manifested in the early stages of the growth of the crop, probably because the cyanimide is a little slower in coming into action, but the differences in the results are small and within the range of errors of experiment. Again, the Rothamsted soil is fairly well supplied with carbonate of lime, hence the sulphate of ammonia can exert its proper action, while no benefit is derived from the carbonate of lime which is produced in the soil from the cyanimide. The cost of production of cyanimide can only be settled when it has been put on the market on a commercial scale; it may, however, be taken as certain that if the manure can be sold on a parity with, or a little cheaper than, sulphate of ammonia, it may be employed by farmers on a large scale with every confidence of a good result." This is the more important as it tends to relieve the cultivator of the risk of exhausting the supply of available nitrogen. If it can be obtained from the atmosphere, there need be no fear of the supply running short.

Insect Pests of the Farm and Garden, by F. Martin Duncan (Swan, Sonnenschein and Co). An excellent little handbook to the knowledge of insects so far as they concern the cultivator. The introductory chapter is devoted to the details of insect structure and classification, which are lucidly explained. The following chapter is devoted to remedial measures such as spraying, and then the author proceeds to details concerning the various orders of insects, the mites, beetles, flies, aphides, bugs, scale insects, bees, saw-flies, wasps, butterflies and moths, and lastly thrips. As the book only contains 143 pages it is evident that the author has had to make a selection from among the insect pests, and has by no means included all that might have been enumerated. The book, therefore, may be looked upon as an introductory treatise illustrated by prominent examples rather than as a text-book. The descriptions are so clearly written and the illustrations so useful that we can but commend the book to the notice of students and lecturers.

Revolution in Greenhouse Building.—We take the following extract from a Guernsey paper:—"Something unique for Guernsey in the way of greenhouses may be seen at the Ramée Vineries, La Ramée. This is one of Bodegom's patent cement (reinforced concrete) structures. The cement house has, it is alleged, every advantage and no disadvantage as compared to the usual structure of wood. It helps to keep the plants free from disease, because there is an absence of crevices in which plant pests can escape from the fumigant, the only wood used being in the door and the lights. The framework of the house is more rigid, though slighter in construction, than one of wood, and this admits of a greater proportionate area of glass and gives a better lighted house, the difference in this respect between the cement house and the ordinary greenhouse being most marked. The building, consisting of iron wire covered with cement, is claimed to be practically everlasting, and its upkeep is trifling, whitewash alone being used to freshen its appearance. Finally, on the score of expense, the cement house can be built more cheaply than one of wood."

COLONIAL NOTE.

CAPE ALOES.

The Aloes are nearly over in the locality of Algoa Bay, but they have afforded a glorious sight. Those who have seen a wide expanse of the bush covered with Aloes in full bloom will readily acknowledge that it is a sight never to be forgotten. How picturesquely they stand above the surrounding herbage, according to species, with the various other plants at that time flowering!

Here, near a dwelling, some admirer has dropped a few seeds. One sees a species of Ipomœa, or, as it is more frequently called, Morning Glory, intertwined amongst other floral beauties; perhaps some of the golden Senecios, which are so abundant and in great variety, all mingling and flowering together about the tall Aloe pluridens, which is the principal species in the spot where my thoughts have now wandered. This Aloe may here be seen in many thousands. Sometimes one sees a form with yellow flowers, instead of the dull red usual to the species, which greatly adds to the colour effect of the scene.

Mr. Chabaud, to whom the property belongs, is ever willing to take any lover of the native flora to see the glorious sight during the Cape winter. A visitor would spend here a pleasant half-an-hour, for the Cape flora has no champion more enthusiastic and one who takes more special interest in this beautiful and interesting genus of the natural order Liliaceæ.

It is a pity they are not more appreciated in England. With what gratification do the visitors from the Aloe's home look over the genus in the succulent house at Kew, and how pleased they are to relate, when looking through their own collection, that this species is growing at Kew, and so forth! What a pity Cape Colony cannot have a botanical, a real botanical, garden of its own, so that all the species of the genus might be found in one place, and that open to the public. *Harry Rabjohn, August 3, 1906.*

THE IMPERIAL BIOLOGICAL INSTITUTION FOR AGRICULTURE AND FORESTRY AT DAHLEM, GERMANY.

The origin of this State-supported institute was due in the first place to the needs of agriculture, and has attained an increasing significance for horticulture. The establishment of the institution was due to the initiative of Dr. Schulz-Lupitz, a well-known agriculturist and member of the Reichstag, who brought in the following motion on March 24, 1897:—"The Reichstag shall determine to request the united Governments to establish an agricultural technical institute for bacteriology and phytopathology, and afford the requisite means from the public purse for the carrying on of the work." The fact that agriculture, forestry, and horticulture suffered heavy losses from plant-diseases, and that means and methods were needed in order to prevent and avoid them; the importance which certain bacteria have for cultivated plants, especially for the Leguminosæ, and in effecting changes in the nature of manures and soils afforded the chief reasons for Dr. Schulz-Lupitz's proposal. In February, the following year, the Reichsgesundheit Office instituted a commission, consisting of men eminent in science and practical work, to discuss the ground lines for the organisation and scope of the project; and in the same year the money grant was sanctioned, and with but little delay the institution was established, not, however, as an independent authority, but as the biological department of the Reichsgesundheit Office (Office of Health). This department dealt with matters which would fall within the purview of the newly-created body—for example, the protection of the Grape vine against the Reblaus (phylloxera), which had engaged its attention for many years, and for this reason the union of the new with the older body seemed to be desirable. In April, 1905, the separation of the biological section from the older office was effected, and the scope of the work was thereupon greatly enlarged, so as to include the study of the injurious insects, and of the epidemics among plants brought about by migratory insects, the depredations caused by mice, crows, marmots, etc., phanerogamic parasites, fungi, and other micro-organisms injurious to plant life; further, animal and vegetable organisms which are of use in the growth of plants and those which are destructive of those organism. It is in this field of research that scientific work is so useful to the cultivator. The action of nitrates in the soil, and of destructive bacteria, and the bacteriology of manures; in particular, that of stable manure is still only partially understood, and needs further elucidation.

Researches are being carried out regarding injury caused by smoke, and the gaseous products emitted by smelting works. Bee and fish culture will be investigated, and on such matters science will be found capable of affording considerable assistance to practical men. The new institution will further take an interest in the provincial institutes by making foreign

and home literature easily accessible, and eventually by acting as an organ of reference in regard to the various subjects engaging its attention.

It is intended that there should be annual conferences, to which the principals of the provincial institutes, members of scientific societies, horticulturists, and agriculturists will be invited, and who will afford the required connection of scientific activity and practical affairs. The director of the institute is Dr. Rudolf Aderhold, formerly president of the botanical department of the research station of the Royal Pomological Institute at Proskau, in Silesia. *Gartenwelt.*

looking leaves. It is planted in the American garden in heavy soil, to which have been added equal parts of peat and cow-manure. The plant is about 8 feet high.

BIGNONIA GRANDIFLORA.

This handsome climber is now flowering on a south wall of the mansion at Leonardslee. Some of the larger bunches have as many as from 40 to 50 flower buds, some of which are already expanded. The plant is exceedingly ornamental and beautiful, especially when the flowers are seen in such profusion.

ARALIA MANCHURICA.

This Manchurian plant is always attractive

the Holland House Show, July 10, 1906. It is one of the largest, if not the largest, hybrid Odontoglossum yet named. Being a secondary cross (crispum × crispo-Harryanum), it seemed likely that its size would have been reduced, but the reverse is the case. The plant had four fine pseudo-bulbs and 13 blooms; there was no disbudding needed to produce a large flower. The accompanying reproduction (fig. 61) is an exact life-size picture. I measured and recorded another of the blooms, but owing to the heat during the two days of the show and to the fact of the blooms having been cut several days before being photographed, it had lost some of its form, and had shrivelled somewhat as silk

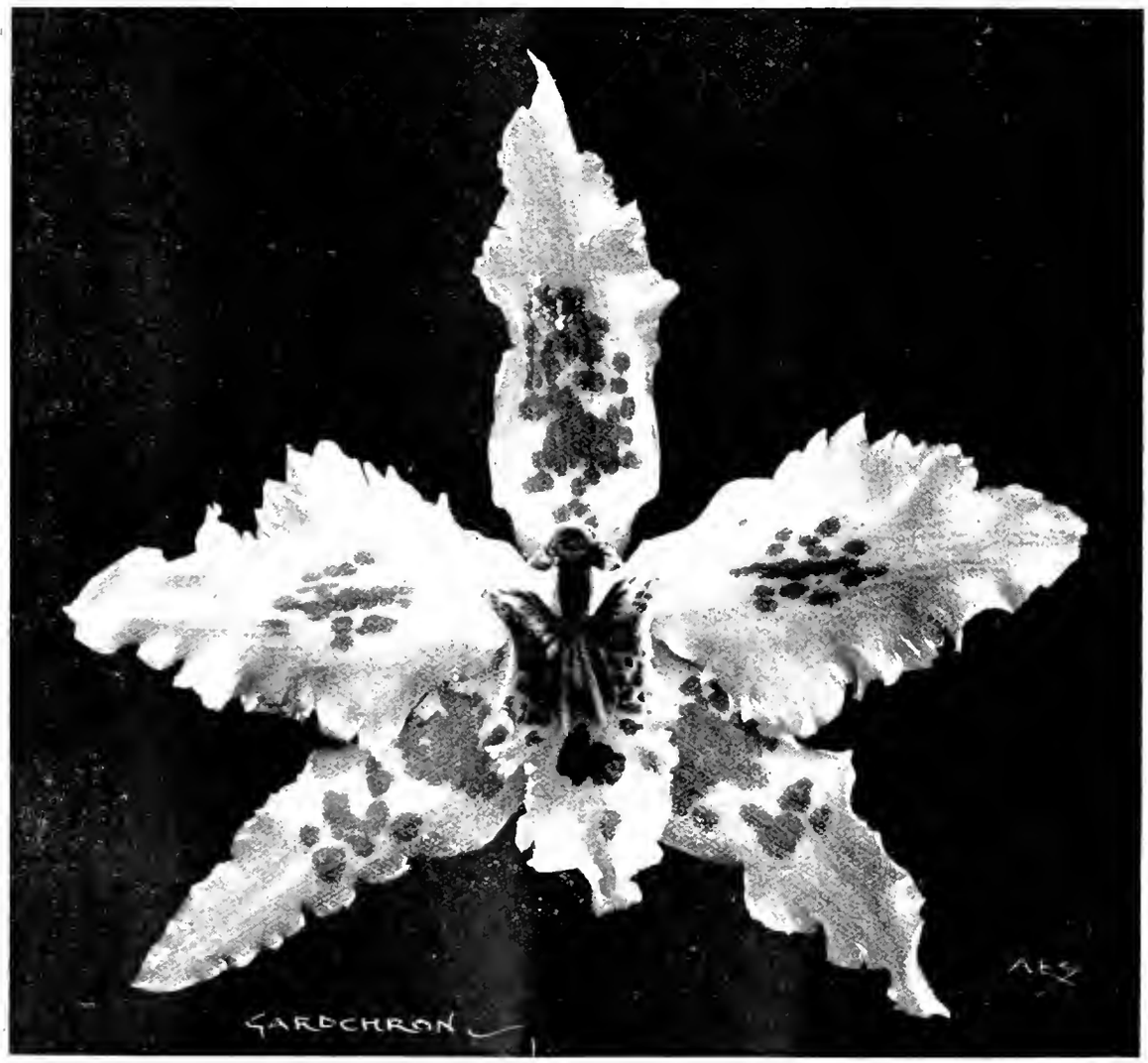


Photo by J. Gregory.

Fig. 61.—Odontoglossum amabile "Royal Sovereign": natural size.

PLANT NOTES.

ROSE ETOILE DE FRANCE.

This beautiful variety forms an excellent autumn flowering Rose, though it is not so robust as one could desire. The colour seen in its petals should ensure it a place wherever Roses are grown. H.P. Roses are badly mildewed this autumn in spite of so-called destroyers having being freely used. I am of opinion that preventatives are better than cures, and if the plants are freely supplied with water and are given liberal syringings in hot weather, they will act as a preventative against fungus.

EUGENIA APICULATA.

This is now in bloom in a sheltered border and is very effective and pretty. The white flowers are well set off by the pretty dark green, myrtle-

either planted in the American garden or in the shrubbery, its palm-like foliage rendering it a very conspicuous object. The flowers are a creamy white, and they are borne in large umbellate racemes, which generally face the sunny side, owing to the weight of the truss. When in flower the foliage often turns a beautiful red tint, forming an additional attraction. It will succeed in almost any soil, though the better the soil the more robust and beautiful will it grow. The ground should be trenched and some cow-manure and leaf-soil added. When the plant is well established its tropical appearance is the more pronounced. *W. C. Cook.*

ODONTOGLOSSUM AMABILE "ROYAL SOVEREIGN."

This extraordinarily large variety of Odontoglossum was shown by Messrs. Sander & Sons, at

having its edges rubbed. The flower is very thick in substance; the ground colour is creamy white, all its markings being violet brown. The influence of O. crispum upon the hybrid is remarkably strong in that the heavy markings have been reduced to spots, except in the sepals, and even then the usual three bar blotches and marginal markings are much suppressed. The shape of the lip has even been broken down from the oblong form of O. Harryanum to the lanceolate shape of that of O. crispum. Reversion has been at work in this case as is clear from a glance.

This plant failed to get even an Award of Merit. This shows that at certain times the higher standard needed for the Odontoglossums of the future will have to be almost beyond present expectations if such things are passed by. Perhaps this may be the "ordinary size" of the future creations. *A. B. Crawshay.*

A GOOD CROP OF MELONS.

For the opportunity of illustrating the house of Melons (fig. 62), at Buxted Park Gardens, Uckfield, Sussex, we are indebted to the gardener, Mr. Thos. Field, who writes:—"The accompanying photograph was taken on May 15 last, and it illustrates the crop of Melons grown on 10 plants. The plants were raised from seed sown during the second week of January. They were planted in the house on February 6. The first ripe fruit was cut on May 10, the variety being Ringleader, the last, Windsor Castle, on June 24. The crop comprised some 64 Melons, some of which weighed as much as 10½ lbs. each. The varieties grown were Ringleader, Jubilee, Windsor Castle, British Queen, Earl's Favourite, and Blenheim Orange."

KEW NOTES.

GESNERA CARDINALIS.

This showy plant is less popular in gardens than it was a few years ago. This is to be regretted, for it is a very useful greenhouse subject.

The flowers, which are long and tubular, are bright scarlet in colour, and the velvety green leaves are also very handsome. The plant attains a height of from 6 inches to a foot, the growths terminating in clusters of flowers. The tuber is distinct, being more solid than that of the majority of Gesneras. The plants are readily raised from seeds. A batch of seedlings now flowering in No. 4 greenhouse furnish a very bright group. Slight variation is noticeable in the flowers, the colour being more intense in some than in others. By careful management they can be had in flower at almost any season, for they can be started into growth at different times. When growing they require a fairly brisk, moist heat, but they should be transferred to a cooler house when in flower. This plant is sometimes met with in gardens under the name of G. macrantha, and it is also known as Dircaea cardinalis.

LILIUM PHILADELPHICUM.

This is one of the upright flowering species. According to the *Botanical Magazine*, where it is figured tab. 519, it was first sent to this country by Mr. John Bartram, of Philadelphia, in 1759, to Mr. Philip Miller, but although so long known to cultivation it is not often met with in gardens.

It has a rather wide geographical distribution over the Northern United States of America and Canada, where it grows in open woods, apparently preferring shelter with but little if any shade.

A number of plants are now in flower in the American garden, where it was planted several years ago in a bed of Cupressus filifera aurea. The shelter afforded by the foliage of the latter protects the Liliums from late spring frosts, and also prevents the soil from becoming parched by the sun.

The flowering season is at the end of July and the beginning of August. The slender stems are 1 foot to 2 feet in height; the leaves are usually found in whorls, but solitary leaves are sometimes found on the stems. The terminal flowers are solitary or 2 to 4 together in an umbel. The flowers, averaging 3 inches across, have orange red segments spotted with purple near their base. They vary somewhat in shade of colour, but I have not seen a flower quite so dark as that illustrated in the *Botanical Magazine*. Each segment is distinctly stalked.

DABEOCIA POLIFOLIA VAR. ALBA.

This is the white form of the St. Dabeoc's Heath, an evergreen shrub 1 to 2 feet in height, native of south-western Europe and one or two localities in Ireland. The foliage is small dark-green above and white beneath; the flowers are drooping, terminal in loose racemes. A circular bed in the American garden is covered with its pearly-white flowers, which viewed from the Palm-house Terrace presents a pleasing object.

The Dabeocias have a Heath-like appearance, and they belong to the same natural order as these plants—Ericaceæ. The flowering season extends from June to late autumn, the plant being at its best condition at the end of July and the beginning of August.

Propagation is effected by layers or cuttings inserted in autumn and by seeds. The soil in which they are grown should consist mainly of sandy peat with the addition of a little loam. Like most other members of the Ericaceæ, they will not grow if lime is present in the soil. *D. D.*

NOTICES OF BOOKS.

The Book of Market Gardening. By R. Lewis Castle. Published by John Lane, The Bodley Head, Vigo Street, London, and New York, by the John Lane Co. Price, 2s. 6d. net.

Viewed in reference to the action of the Board of Agriculture and the Local Government Board at the present time, we must regard the publication of this little work by so experienced an expert as the author as being most opportune, and we trust that it will be widely read by the persons to whom its teaching will be of the utmost value, likewise by the members of the two Boards.

With matters of cultivation it does not concern itself at all; these being generally understood by market gardeners, and to a certain extent by professional gardeners; but it is crammed with information concisely stated, gained in the school of practical market gardening in various parts of the country; as for instance, at the Neville Court gardens and nurseries, the Duke of Bedford's fruit farm, Ridgemont, and Hampton Park farm. The author was the recipient of a prize, given by the Royal Horticultural Society, of Dr. Hogg's silver medal for an essay on "grading and packing fruits and vegetables," and of the gold medal of the Fruiterers' Company. So much for his credentials.

The book begins naturally with a chapter on the selection of land, giving the current prices per acre, and the conditions which determine them. There are under this heading sub-chapters on land-tenure, compensation, situation and accessibility, special districts, soil, aspects, and altitude. Then come chapters on labour questions and difficulties, and under these the connection existing with these of cottage erection. Crops, methods and management are duly noted, in reference more especially to specialisation, showing how gigantic businesses have been created in the production of Grapes, Cucumbers, or Tomatos among glasshouse fruits; Roses, Chrysanthemums, or Daffodils amongst flowers; Celery, Onions, Asparagus, Cabbages, Cauliflowers, Brussels Sprouts, or Potatos among vegetables; and Apples, Pears, Strawberries, Currants, or Gooseberries amongst hardy fruits, and such exceptional crops as Mushrooms. Hardy bush fruits, as befits their importance to the community, are shown to be indispensable, and they should always be grown in conjunction with the cultivation of vegetables and flowers, Strawberries being regarded by the author as the best paying crop in one place; in another, Currants or Gooseberries, success with these being more certain than with Apples, Plums, Cherries, or Pears. According to the Board of Agriculture Committee, the total approximate area under fruit culture in Great Britain amounts to about 300,000 acres. Economy in production is a point greatly insisted upon, but at the same time false economy is deprecated as being often the cause of loss instead of gain, that which appeared as extravagant expenditure in developing, or organisation of a business, resulting ultimately in gains out of all proportion to the outlay. There is a useful chapter on cultivation with the aid of glass, touching on temperature, ventilation, water supply, sunlight and sunheat, insects and diseases.

Then come remarks on kinds and varieties, variety trials; the official trials of the Royal Horticultural Society and the exhibits at the fortnightly meetings of this society being referred to, as well as the trials of some of the County Councils. The preparation of produce for sale, the gathering and collection of flowers, vegetables and fruit, grading for profit, the forms of baskets, crates, boxes, the methods of packing, &c., come in for due notice, the remarks being appropriate and useful. There is, in fact, scarcely a subject connected with the business of the market grower which is omitted.

The chapters on co-operation, assessment, taxes, rates, compensation and insurance, fruit preserving and crop returns, values and profits, with which the book closes, show an intimate knowledge of the subject.

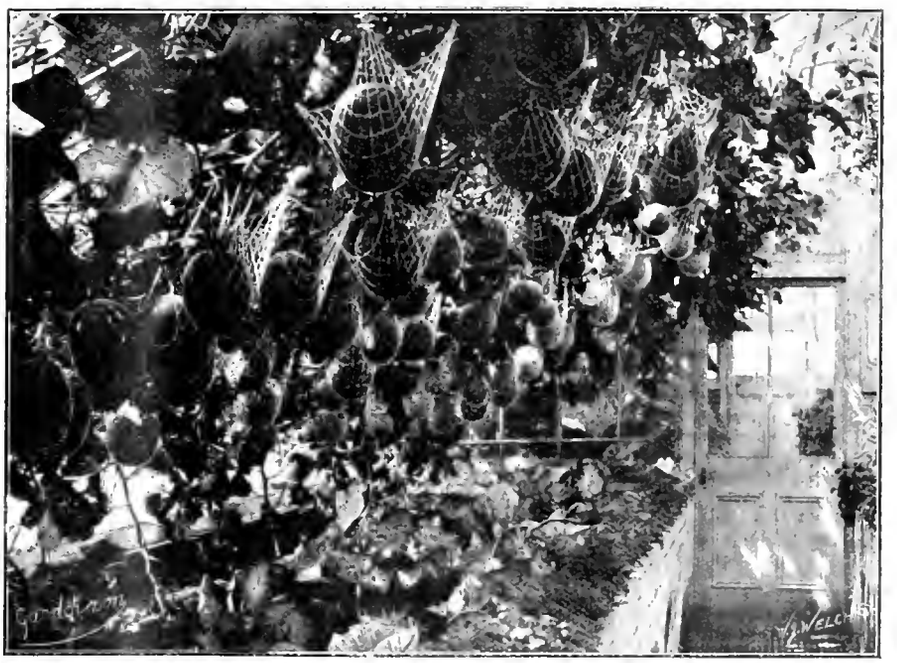


Fig. 62.—Melon house at Buxted Park Gardens.

HOME CORRESPONDENCE.

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

Flowers at Kensington.—Visitors to Kensington Gardens should be careful not to miss the gay show of flowers on the south and east fronts of the palace. The beds have been particularly bright this summer, and some of the varieties of plants employed to make a very fine effect are worth noting. At the same time one cannot help observing that in one or two instances the combination of colour has not been particularly pleasing, and it is a pity that one or two little faults of this kind should have been permitted to creep in and mar to some extent an otherwise fine example of ornamental gardening. At Kensington they still appear to be conservative in the matter of bedding plants, for the good old-fashioned zonal Pelargonium still holds pride of place, and no such innovations as Begonias or Verbenas are used for bedding. All the principal borders are planted with Pelargoniums, of which a grand scarlet, Paul Crampel, is the most prominent. This is a splendid variety for bedding, being particularly free in habit and bearing immense trusses of a brilliant scarlet. Another good variety is Phyllis, a profuse bloomer of a bright pink hue, its one fault being that it seeds too freely and therefore soon begins to look untidy, unless it has constant attention. Rose of Allandale is, perhaps, best described as a magenta pink of a trailing habit and almost like ivy-leaved Pelargoniums in some respects. It is certainly a taking variety. A good deep scarlet is provided in Mrs. H. Cannell, although beyond its colour there is nothing very striking about this Pelargonium. With Phyllis, already mentioned, this variety would probably do better in a less hot summer. Last of all we come to two varieties which the palace gardeners might very well have omitted from their list—Dr. Nansen, a white with very poor straggly blooms, and Mrs. Wright, a hideous magenta-coloured flower with nothing at all to recommend it. These two varieties are planted in mixture, and they form quite the worst bed of the whole collection. The magenta goes badly also with the pinks and scarlets near at hand, and might with advantage have been dispensed with. In other borders a good effect is obtained with Coleus in variety and Abutilons, the latter forming a good centre in groups of four or five in small circular beds. A striking feature of the gardens is the long border on the western side of the south lawn facing east. This is a wild mixture of Sweet Peas, Stocks, Canterbury Bells, Violas, and many other old-fashioned flowers, the whole forming a very effective display against a background of flowering shrubs and dark evergreens. *East Sussex.*

Catalpa bignonioides.—Among other examples of beautiful flowering trees seen growing in Hampstead are several fine Catalpas. One in John Street has, during the last few days, become covered with a profusion of lovely blossoms, and it forms a feature in this picturesque old street of Hampstead. The Catalpa is deciduous, but after the leaves have fallen the long, slender fruit-pods remain and give a curious appearance throughout the winter to its leafless branches. A very fine specimen may be seen in the Marylebone Road; another in Harrington Square, Hampstead Road, while others are met with in some of the dusty and most fog begrimed places of the metropolis. In Gray's Inn Gardens are two of these trees. It is said by some—disputed by others—that the older was the first specimen imported into England, having been brought over from America by Sir Walter Raleigh during the reign of Queen Elizabeth. The larger and finer of the two is an offshoot from its aged parent, and is about 50 years old. The finest Catalpa tree known in this country stands in the Courtyard at Claydon House, Bucks. Some years ago this exceedingly handsome tree took the first prize as being the largest of its kind, as well as the most symmetrical in appearance. The loose spikes of flowers resemble the inflorescence of a Foxglove, and like that flower the corolla is beautifully spotted. The flowers have scarcely any calyx, and in their shape they resemble the globular flowers of the Figwort—Scrophularia nodosa—and the order Bignonaceæ, to which it belongs, is closely allied to the Scrophularineæ. The Tulip tree—Liriodendron tulipifera—has this season presented a more beautiful appearance than for years past. *James E. Whiting, 41, Heath Street, Hampstead, N.W.*

Peach Thames Bank.—Mr. Ward alludes to this excellent late yellow fleshed variety in his article upon Peach culture, p. 127. It was raised by the late Mr. Rust previous to his taking charge of Eridge Castle Gardens. We used to grow it in these gardens, but lost the tree and failed to secure another. I should be glad to hear that young trees of this variety are still to be had. *T. Coomber, The Hendre Gardens, Monmouth.*

The Rock Garden at Kew in June.—At every season of the year there is much to interest the flower-lover in the Royal Gardens, Kew. By whatever section of floriculture the visitor is especially attracted, he will find an object lesson in its treatment and in the wealth of species and forms present in these gardens. On entering the gardens early in June it is difficult to decide whither to direct the steps, such beauties are to be admired on every hand, but, to those whose bent lies in the direction of the cultivation of Alpines and such-like plants, the skilfully laid out rock garden will prove the special lodestar. Though during a period of several months this portion of the grounds will well repay a visit, it is perhaps at the season of which I write that it is at its brightest with innumerable floral treasures. In the moist peat bed beneath the perpendicular rock-work, in the crevices of which flourish Ramondia pyrenaica and its white form, with other species, and Haberlea rhodopensis, a fine collection of the Meconopsis genus was in bloom, including the bright yellow M. integrifolia, the purple-blue M. racemosa, M. aculeata, pale purple with a tinge of red in the petals, the well-known M. Wallichi and M. punicea, 2 feet 6 inches in height, with drooping, crimson flowers about 6 inches across. In the same bed were growing Primula Cockburniana, with glowing orange flowers, P. deflexa, over 2 feet in height, bearing a crowded head of small purple blossoms with white centres, and Ourisia coccinea, as well as Cypripediums in variety. A little distance away was growing a fine plant of the handsome Rodgersia podophylla, with the newer R. æsculifolia, R. pinnata and R. p. alba in close proximity. A fine collection of Saxifrages was in flower, comprising S. valdensis, S. lantoscana superba, S. cochlearis, S. lingulata, S. Hostii, S. Portæ, S. Macnabiana, S. vochinensis, S. cartilaginea, S. Wallacei, S. Geum gracilis, S. trifurcata, many varieties of S. aizoon and other hybrids. Amongst other flowers in bloom were Campanula thyrsoides, with greenish white blossoms, the slender-growing C. Steveni, Dianthus callizonus in fine bloom, D. nitidus, D. fragrans, Oncsma echioides, O. sericeum, with pale, yellowish white flowers. The single scarlet Ranunculus asiaticus, a beautiful flower, unfortunately unknown in gardens, the scarlet Delphinium nudicaule, Dicentra eximia and D. formosa, Edelweiss, the lavender-blue Iris tridentata, Dodecatheon Meadia and its white variety, Anemone palmata alba, A. polyantha, A. Regeliana, Æthionema cordatum and others, Eremuri, Gentiana verna, Eomecon chionanthum, Galax aphylla, throwing up bud, Linum arboreum, a mass of yellow, the fine Ornithogalum arcuatum, not so tall as usual, Oxalis enneaphylla, Paradisea (Anthericum) liliastrum, the blue flowered Pentstemon humilis, Senecio aurantiacus, with small orange flowers, and Lonicera pyrenaica, bearing greenish white blossoms. *S. W. F.*

Peach Culture Out-of-Doors.—I have no doubt but that most readers will agree with Mr. Ward as regards the methods of planting, &c. But I was surprised he did not mention the "Blister" disease that has caused great damage to the trees during the past few seasons, and which has, I think, been the reason why many growers have largely abandoned planting Peach trees outside. I have not up to the present found a remedy for this complaint. The trees are always well netted at the critical time, but in spite of all precautions the last few seasons' results have been very disappointing in *North Devon.*

Beech Trees and Lightning.—I have always heard since boyhood that Beech trees were immune from strokes by lightning and I think the following facts will bear this out: At Lee Moor, in the parish of Shaugh, Devon, during the month of June, 1902, a clump of Scots Fir, among which were four Beech trees, was struck by lightning during a heavy thunderstorm with the result that all the Fir trees were killed, but not one of the Beech trees was injured. I think this is sufficient proof that lightning has no effect upon Beech trees. *T. Martin, Trevabyn, Plympton, Devon.*—[One instance can hardly be deemed "sufficient." Some of our readers can perhaps supply others.—Ed.]

Kochia scoparia.—It may not generally be known that the pyramidal specimens of this plant which one sees in the London parks have been made to assume this form by cutting back the side-shoots with a knife or with a pair of small shears. Specimens grown in this manner differ greatly in appearance from plants which have been grown with insufficient space between the shoots. Some growers, whose plants have not been trimmed into shape in their earlier stages of growth, are inclined to grumble if stiff flowering shoots are produced, and in some cases it has been stated that the plants which they have grown as Kochia scoparia are not true to name. The trouble all arises from the omission to check the coarser growing shoots in the manner described. When these plants assume autumnal tints and the nights become colder, they may be potted up for the decoration of the conservatory and the greenhouse. About ten days before their removal from the flower-beds, the roots should be cut through with a sharp spade at a distance of 3 inches from the main stem. It will be found, as a rule, that many new fibrous roots will be produced near to the stem, which will enable the plants to quickly overcome the check caused by removal. *F. James.*

Yellow Summer Reinette Apple.—Late flowering varieties of the Apple should form a considerable proportion of every collection in our most uncertain climate, and the above-named variety, flowering at the end of the month of May, almost invariably escapes injury from late frosts. *F. M.*

Forest Trees in Germany.—I have recently seen in Germany a wonderful collection of Pines, especially Sciadopitys verticillata, only inferior to the magnificent specimen at Mr. Bolitho's place at Trewidden, Cornwall. Shade and peat evidently suit this tree. The proprietor grows a large variety of Pines, some of his forests being some 5 miles in length, and he is always seeking for trees which will succeed in arid, sandy soil. He has found that the Banksian Pine, so far, has showed its superiority over P. silvestris and P. Strobus. It was interesting to see the great care and method adopted by the Germans in planting their forests. Quercus rubra is another of their favourite trees even in soil which we should not believe to be able to support it: but then water is also found at a depth of 10 feet. *B., Cork.*

Gladioli.—Herewith I send you a few spikes of some of my seedling Gladioli. The cream coloured one is a new seedling, and in common with a number of similar and equally good ones is pure in colour, and I think this purity will be maintained. As I have noted before in previous communications, wireworm has been a terrible scourge, but I have minimised its depredations to a great extent this season by ramming the beds after planting. Some I put a heavy stone roller over, but the Gladioli seem to like it, and this process has succeeded when both heavy doses of soot and vaporite both failed utterly. *W. C. Bull.* [Large spikes of well formed, brilliantly coloured flowers.—Ed.]

Apple Early White Transparent.—I am forwarding you a few fruits of the above-named Apple. They are picked from a young nursery espalier tree only planted last December. We have not grown this variety before, but were we planting a number of trees for early fruiting should decidedly put a good proportion of the variety in question. I do not know anything of its history, it is not mentioned in Hogg's *Fruit Manual*, though I find it catalogued by several of our leading nurserymen. Judging by appearance it has evidently some close relationship to Lord Suffield or Keswick Codling. I enclose a fruit of the former for comparison. *H. J. C., Grimston Gardens, Tadcaster.* [In shape very like Calville Blanche, and very fragrant and richly flavoured.—Ed.]

The Plum Crop.—After carefully reading the reports of the fruit crops, I notice a great scarcity of plums. I am sending a branch for your inspection that I left unthinned. I am pleased to state that we have a remarkable crop of these fruits. The garden consisting of 2½ acres of ground is all walled around, and the fruit crops this year are particularly good, there being an abundance of all small fruits. The soil here is loam on chalk, the situation high, being almost level with Box Hill. *Thos. Beeson, Headley Park Gardens, Epsom.* [The small spray sent was carrying about four dozen fruits, that hung in clusters. Mr. Beeson is to be congratulated, for most other growers have next to none.—Ed.]

Blackberries.—The note from Maidstone (p. 137) in reference to the promise of a Blackberry crop this season is interesting in so far that it applies to this one fruit which seems to be acceptable to all when ripe, and which is, in consequence of its wildness, everybody's fruit But the conditions under which Blackberries are habitually grown wild, by roadsides in crowded hedgerows, with roots starving from want of moisture at the fruiting season, too often cause the promise of a crop, judged by the blossom seen, to be followed by disappointment. The people who collect Blackberries so produced seldom have the fruit fully developed or ripened, hence the need of its culture on a large scale It is not at all difficult to obtain the plant in commerce, and some very fine selections of British Brambles exist which, under good culture, produce fine, richly-flavoured, juicy fruit. These well repay proper culture. There is the well-known, yet far too little grown Parsley-leaved Bramble, Rubus laciniatus, plants of which should find a place in every garden. Earliest of all, however, is the now famous and large-fruited Loganberry, so far America's finest production among the Rubus tribe. This seems to adapt itself to any soil, and also to ripen its annual growths, in any sunny position. I saw but recently plants of it growing in almost pure sand at Reigate in a small garden, where early in July it was fruiting finely. The grower lamented that he had not room to grow it largely, there being such demand for the berries. Veitch's Mahdi is the result of a similar cross to that which produced the Loganberry, but the fruits are broader and of a deep claret colour. But whilst there are others which may be equally good, these named suffice to show that if any area of good, deep, retentive soil, well exposed to the sun, be planted with these very fine fruiting Brambles, not only will frost troubles be escaped by them, but there is a market open for the fruit and remunerative prices awaiting them. *A. D.*

The late William Chester.—Many of the present and the old Chatsworth hands and other persons who came in direct contact with Mr. Chester will have read with regret of the death of this worthy gardener. Why not perpetuate the name of "William Chester" by making a special appeal inviting donations to a fund on behalf of the Royal Gardeners' Orphan Fund? Many of the Chatsworth hands are to-day subscribers to the R.G.O.F., but I venture to think that many would still be prepared to contribute on behalf of such a "memorial" fund, the sum collected to be paid in either as a "donation" or as might be decided later. Should there be anyone with greater influence than myself I am willing to co-operate and send my donation, but, failing another, I shall be glad to "act" in the interests of a fund for the purpose. Donations need not be large in every case, but the many should make a respectable sum which would be gladly received to strengthen the funds of the society in question. *Stephen Castle, West Lynn, Squires Lane, Finchley, London, N.*

Viola Virgin Queen.—I forward you a bunch of Viola Virgin Queen to show how well it stands drought, even on a light sandy soil. The habit is perfect. I find it a valuable variety for florists' work owing to the flowers possessing long stalks. The flowers are of the purest white, and it has been highly spoken of. *Arthur Young, Oxted Nursery, Oxted, Surrey.* [An excellent white variety of robust habit and with large fragrant flowers that are produced in abundance.—Ed.]

Sutton's Evergreen Dwarf Bean.—I sowed one row of this variety beside Canadian Wonder, and picked pods quite 10 days before the latter came into bearing. We have been picking during the past six weeks, and shall do so for some time. Our ground is rather heavy and gets very dry, and as the weather has not been favourable for growing Beans, I consider my rows have answered all expectations. It has also proved, with me, a good forcing variety. *J. A. Huntley, The Gardens, Oak Hall, Buckhurst Hill.*

Obituary.

Squibbs, Robert.—We regret to record the death, in his 83rd year, of this highly esteemed gardener, which took place at his residence, Albion Terrace, Sleaford, on Thursday the 9th inst. Mr. Squibbs was for many years head gardener to the Marquis of Bristol at Ickworth Park, and was held in high esteem by his lordship and the members of the family.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

August 14.—*Present* Mr. G. Massee, F.L.S., V.M.H. (in the chair); Messrs. G. Nicholson, E. M. Holmes, J. Odell, C. Shea, C. H. Hooper, H. Gussöw, and F. J. Chittenden (hon. secretary). Visitor, Mrs E. Hancock.

Diseased Cinnum and Dracæna.—Mr. Gussöw reported that he had examined these shown at a recent meeting by Mr. Worsley, but had been unable to find on either any parasite to which the death of the plants could be attributed.

Reversion in Picotee.—Concerning the plant shown by Mr. Douglas at the last meeting, Mr. F. Williams, F.L.S., writes: "The stem sent to me bears a female flower only, and the styles are very much coiled, as is so frequently the case when only female flowers are produced From the clear and interesting history given with the plant, the result is not at all a matter of surprise. It is certainly a curious result. It is an attempt on the part of the seedling at atavistic reversion to simpler type—of a form of reversion so lucidly described by Mendel in his experiments on hybridisation, and to which I have drawn attention in reviews of Mendel's work in the *Journal of Botany*, and in an explanatory note in my *Prodromus Floræ Britannicæ*, part III. The whole energy of the plant was directed to modification—and a very marked one—of its nutritive organs at the expense of the development of its floral organs. . . . . The whole of its energy of growth was expended in the modification of the leaves. . . . Even when the flower is produced it is (in the specimen sent) an imperfect one. No doubt it was less coddled in its cultivation than other specimens, and so took the opportunity in a harder environment to revert to a simpler type I have before pointed out that Pinks resent coddling as much as they can; the natural habitat of all species of Dianthus is in exposed situations, slopes of hills facing the wind, edges of rocks, overhanging ledges, unprotected banks, and open sandy ground. Altogether the specimen has a much more wild appearance than its somewhat artificial origin suggests."

Smut in Carnation.—Mr. Massee reported that flowers of Carnation Miss Audrey Campbell with discoloured centres were "attacked by the fungus Ustilago violacea, and to the presence of this fungus the discolouration was due. The spores of the fungus are produced in the anthers In several of our wild plants belonging to the Pink family this disease occurs, and in those instances the mycelium is a perennial in the root. Hence it appears every year, and a plant once infected remains so for life."

Malformed inflorescences.—Mr. Odell showed some specimens of Trifolium repens virescent, similar to those shown at the last meeting by Mr Sutton He said that he found it much more frequently in temporary than in permanent pastures He also showed Plantago major with virescent flowers, and Scabiosa atropurpurea in which the central florets were displaced by long green bracts.

Damaged Cactus stems.—From Teignmouth came shoots of Phyllocactus showing brownish spots of somewhat irregular shape, and nearly a quarter of an inch in diameter In the centre of each was a dark spot looking like a puncture. These were no doubt caused by punctures from the spines on neighbouring shoots, and by the production of cork on the part of the plant in its efforts to heal the wound made by the spines.

Buds on inflorescence of Saxifrage.—Mr E. H. Jenkins of Hampton Hill, sent a specimen of Saxifraga Cotyledon received from Bavaria, in which a large number of small rosettes of leaves had been produced in the axils of bracts on the axis of the inflorescence. He said that the occurrence was very frequent this year with this species, and suggested that "by reason of the incessant rains experienced there the functions of the flowers were interrupted, or their power of forming seeds destroyed. Possibly the pollen had been washed away or injured, and no seeds were formed The flowering stems remaining green beyond their usual time directed their energies to the formation of these small rosettes."

Montbretias dying.—Plants of Montbretia with foliage dying and turning a dark brown colour came from Chingford The trouble seems common this year, and appears to be a physiological one rather than one due to any specific organism. The best plan to adopt in order to avoid its occurrence appears to be to move the plants at least every two years; plants left for a longer time very frequently succumb to the disease.

Bean anthracnose.—Specimens of Runner Beans were received from Plympton badly affected with Bean anthracnose caused by the fungus Colletotrichum undemuthianum. The disease is described, and treatment indicated in *Gardeners' Chronicle*, 23 (1898), p. 293, and *Journal Royal Horticultural Society*, xxvii. (1902), p. 809.

Melampyrum arvense.—Mr Chittenden showed specimens of the Purple Cow Wheat (Melampyrum arvense), a somewhat rare semi-parasitic cornfield weed in England, from an Essex locality, together with the seeds, which bear a remarkable resemblance to dark grains of wheat

Solanum Commersoni Mrs. Hancock gave an interesting account of the way in which she introduced this plant, which has recently been the cause of a considerable amount of discussion among growers of Potatos, particularly on the Continent, into her garden from Mons. Labergerie's garden at Verrières after the Brest conference. She first received it in January, 1904, and has succeeded in establishing it thoroughly well in her garden at Horeham Road, Sussex, and has since been able to distribute a considerable number of tubers to different parts of the country. She finds it will withstand a greater degree of cold than do the varieties of S. tuberosum. Her remarks were illustrated by a photograph of the plant growing, specimens of the plant in flower, and with immature fruits and tubers of a considerable size. She had cooked the tubers and found they possessed no bitter flavour.

EASTBOURNE HORTICULTURAL SOCIETY.

August 15.—The above society held its annual show in the grounds of Compton House, kindly lent by his Grace the Duke of Devonshire, K.G. The private gardens were also thrown open to the visitors, while her Grace gave permission for the famous Dexter cattle, with which so many prizes have been won, to be viewed.

The exhibition was held in four large tents, which in some cases were much crowded, so great was the competition in some of the classes.

The attendance of the general public was numerous.

Plants.—Some good groups of plants were seen, the 1st prize for these being secured by Mr. G. T. Scott, Upperton and Ceylon Nurseries; 2nd, Mr. I Duke Dinner table decorations formed a strong feature The premier award in the professionals and nurserymen's classes was well won by Mr. A B Wadds (gr. to Sir Weetman Pearson, Bart., Paddockhurst, Worth), he having a splendid table, decorated largely with Odontoglossum crispum The 1st prize in the ladies' class was won by Mrs. Raffey Messrs. Clark and Jenner staged respectively the best sprays and buttonholes.

In the Rose classes chief honours fell to Messrs. Durant-Young, with Mr. Eversfield 2nd

In the open smaller class for 24 blooms Messrs. Young, Woollard, and Eversfield won in the order named.

Dahlias of high quality were staged Messrs. Cheal and Sons, Crawley, were placed 1st for Cactus, for single varieties, and for pompon Dahlias

The best 18 bunches of hardy perennials were shown by Mr. A Charlton, and he was easily first, having splendid material. Mr. G H. Simmons (gr. to H. G. White, Esq.), won the 2nd prize.

Messrs. Peters and Duke won in the classes for Gladioli in the order named.

Stove and greenhouse plants are not so well staged now as they were years ago, but good groups of Begonias were shown by Mr. W. F. Thomas, Wannock Flint Garden, who secured the 1st place, and by Mr W Unsted who was 2nd. Mr. Godden showed the best Fuchsias, Mr. I Duke the best specimen plant in bloom, and Mr Lyddiard the best foliage plant Messrs. A Kemp and G Grigg had the best decorative plants, and Mr. Lyddiard the best exotic Ferns.

The premier group of Ferns were those shown by Messrs. Penrose Bros., Hurstmonceaux.

Mr. I Duke was to the fore in the class for foliage plants.

Fruit of splendid quality was seen in all the classes. Plums were not shown largely, but no

falling off in their quality was noticeable. No fewer than six collections of fruits were seen. Mr. J. GOKE, Albion Vineyard, Polegate, won with an assortment including splendid quality Grapes, Peaches, Nectarines, and Melons. Mr. G. GRIGG (gr. to the EARL OF ASHBURNHAM), was a close 2nd. A good Pineapple was seen in the 2nd prize display. 3rd, Mr. H. Poulton (gr. to C. T. CAYLER, Esq., Tunbridge Wells).

In the Grape classes Mr. J. GOKE led easily for black kinds, while Mr. W. WELLER had grand bunches of Muscat of Alexandria in that for white fruit. The class for any other variety of Grape saw Messrs. GRIGG, POULTON, and GOKE in the order named. Mr. F. THOMAS had the best scarlet-fleshed Melon in a strong competition, and Mr. WEST the best green fleshed. Mr. J. Bettles (gr. to CECIL CHANDLESS, Esq., Sherrington Manor) was an easy 1st winner for Figs, a class usually well contested at this show, Mr. T. WEST being 2nd. Mr. J. GOKE showed the finest Nectarines, and Mr. G. GRIGG the best Peaches. The last-named exhibitor was also first for dessert Pears. Mr. GRIGG showed first-class Apples, and his were also the best dessert Apples. In a class for a collection of Apples, Mr. THOMAS was easily 1st, Messrs. GOLDSMITH and HUNT taking 2nd and 3rd prizes respectively.

Vegetables of good quality were seen. In the class for a collection, Mr. A. B. WADDS, Paddockhurst, was an easy 1st prize winner, and he was followed by Mr. KEMP, Mr. PUTLAND being 3rd.

Some splendid non-competitive exhibits of plants and flowers were seen. Groups were staged by Mr. MAY, Compton House Garden; Messrs. DURANT-YOUNG, Eastbourne; Messrs. CHEAL and SONS, Crawley; Messrs. CHARLTON and SONS, Tunbridge Wells; Mr. WILL TAYLOR, Hampton; Messrs. WALLACE and Co., Colchester; Messrs. BARR and SON, Covent Garden, and Messrs. HICKS and BLOOMFIELD, Reading.

CATALOGUES RECEIVED.

ENGLISH; BULBS, ETC.

DICKSON'S, Chester—Bulbs.
BROWN & WILSON, 10, Market Place, Manchester—Bulbs.
GILBERT & SON, Dyke, Bourne, Lincolnshire—Anemones, Bulbs, Plants, &c.
LITTLE & BALLANTYNE, Carlisle—Bulbs.
W. DRUMMOND & SONS, LTD., 57 & 58, Dawson Street, Dublin—Bulbs.
OSL & ALL AGRICULTURAL AND HORTICULTURAL ASSOCIATION, 92, Long Acre, London, W.C.—Bulbs.
DIXONS, Hull—Bulbs.
WM. FELLS & SON, 16, Market Place, Hitchin—Bulbs.
J. R. PEARSON & SONS, Chilwell Nurseries, Lowdham, Notts—Bulbs.
WEBB & SONS, Wordsley, Stourbridge—Bulbs.
DICKSON, BROWN & TAIT, Corporation Street, Manchester—Bulbs.
FISHER, SON & SIBRAY, LTD., Handsworth, Sheffield—Bulbs.
HOGG & ROBERTSON, LTD., 22, Mary Street, Dublin—Bulbs.
SUTTON'S, Reading—Bulbs.
CLIBRANS, Altrincham & Manchester—Carnations & Bulbs.
MCHATTIE & CO., Chester—Bulbs.
R. H. BATH, LTD., Floral Farms, Wisbech—Bulbs.
BAKERS, Wolverhampton—Bulbs.
BEN REID & CO., 23, Stirling Street & Exchange Street, Aberdeen—Bulbs.

MISCELLANEOUS.

J. G. WAGSTAFF LTD., Alma Iron Works, Dukinfield near Manchester—Hot-water Boilers.
MESSRS. PROTHEROE & MORRIS, 67 & 68, Cheapside, London, E.C.—Register of Nurseries, Market Gardens, Farms, Florist & Seed Businesses, &c. to be let or sold.

FOREIGN.

J. M. THORBURN & Co., 33, Barclay Street, New York, U.S.A.—Tree and Shrub Seeds, Bulbs and Tuberous Roots.
MESSRS. J. H. KELLAAR & SON, Haarlem, Holland—Bulb Catalogue for 1906.
MESSRS. HAAGE UND SCHMIDT, Erfurt—Dutch Bulbs and other flower roots for autumn, 1906.
VILMORIN ANDRIEUX ET CIE, 4, Quai de la Megisserie, Paris, France—Bulbs, Plants & Seeds.
WILHELM PFEIFFER, Stuttgart, Militarstrasse 74, Germany—Seeds & Plants.
L. NEUFFER, Wandsbek bei Hamburg, Abrensburgerstrasse 4—Ferns, Begonias, Palms, Roses, &c.

ANSWERS TO CORRESPONDENTS.

ASPARAGUS MULCH: *A. B.* The reason Asparagus beds are generally mulched in the autumn, after the plants have matured their growth and the latter have been cut down and removed to the fire heap, is to prevent the roots and "crowns" from sustaining injury from the effects of severe frosts during the interval elapsing between November and March. The soil is raked off the individual beds into the alleys prior to laying on the three inches thick surface dressing of manure. Early in March the soil is shovelled up and scattered over the beds and the surface raked evenly preparatory to the "grass" coming up uninterruptedly through the six inches or so covering of manure and soil; the autumn and winter rains meanwhile will wash the substance of the mulch down to the roots, to be assimilated by the latter in due time. It would not be advisable or practicable to mulch the beds in the manner indicated by you immediately after the crop has been taken, say the middle of June, as the late young growths which had not then pushed through the soil would be likely to get injured in the process, although an ordinary surface-dressing of manure laid on the beds at that time without disturbing the surface soil would certainly have a beneficial effect. The fact of growers residing in seaside districts mulching their Asparagus beds in the autumn, after the September gales have washed the Seaweed ashore, only affords in this case an additional reason for doing the work at this time of the year. The mulching of Asparagus beds in the autumn, as indicated above, is sound in practice and in theory. The conclusions you arrived at in the last two lines of your note are erroneous. *H. W.*

BEECH COCCUS: *W. E. N.* The white floculent mass is composed of insects that are destructive to the trees, and they should be eradicated. You will notice that they only attack the main stem and the larger branches. The best remedy is to scrub the bark and the crevices with petroleum emulsion or with caustic alkali wash. Paraffin emulsion is best prepared by mixing a solution of soft soap in boiling water with an equal quantity of paraffin, thoroughly mixing the two together, and then adding, when required for use, 20 times the bulk of water, churning and mixing as before. Caustic alkali wash is made by dissolving 1 lb. crude caustic soda in water, then adding 1 lb. crude potash or pearl ash, also dissolved in water, ¾ lb. soft soap, and water sufficient to make up to 10 gallons of the mixture. This wash being of a very caustic nature, gloves should be worn by the operator, and the mixture must not be allowed to reach the foliage.

BEGONIAS: *Anxious.* From what you say we conjecture your plants are attacked with the Begonia mite. If so, steeping the plants in tobacco water will destroy the mites, but without seeing the plants it is not possible to give an accurate opinion.

BOOKS: *R. R.* Bentham's *Handbook of the British Flora*, which may be had from our publishing office price 9s. 4d., free by post.

CARNATIONS: *H. B.* The cuttings have rotted from having been planted too deeply and kept too wet. There is neither fungus nor eelworm.

CHRYSANTHEMUM LEAVES CURLING: *B. W.* The diseased condition is due to a rust fungus, Puccinia Hieracii. This disease was figured and described in our issue for October 8, 1898, p. 269. Spray the plants when they are making their growth with potassium sulphide, using ½ ounce of the potassium salt to one gallon of water. You must be careful not to propagate from diseased plants; indeed they should be burned at the end of the season, and a new stock obtained from healthy plants.

CORRECTION: P. 135, col. at end of first paragraph, for "month" read year. *F. M.*

ETHER FORCING: *E. H.* There is no book in English that we know of. The matter has been treated of in our back numbers. Apply to the secretary of the station you mention.

EUCALYPTUS: *F. K.* The shoot is swarming with aphis. Spray the plants with some insecticide such as tobacco water, quassia extract, or soft soap and water with a very small quantity of paraffin added.

FLOWER SHOW JUDGING: *J. J. G.* If the exhibitor publicly announces that he sells his flowers, &c., and this as part of his business from which he derives his livelihood, he cannot be ranked as an amateur. However, the committee being appealed to should know all the facts of the case, and we advise you to accept their decision.—*J. S.* The schedule is worded loosely. If it means 12 distinct genera then you are right in your assumption, but if you have more than one variety of Pentstemon, they might make, with others shown, a total of more than 12 varieties, which number was not to be exceeded. This would, of course, apply to any other vase or vases in the exhibit; for instance, if Roses were shown they must be all of one kind.

FRENCH GARDENING PAPER: *J. K. Le Jardin*, 84 Rue de Grenelle, Paris. If you apply to the Editor of that paper, he will no doubt answer your queries.

GRAPES DISEASED: *H. O. and Amateur.* The berries are affected with the "spot" disease, so often described in these columns. Cut out and burn any of the berries that are diseased and spray the remaining ones with liver of sulphur one ounce to two gallons of water, taking care not to wet the paint.

GUNNERSBURY PARK GARDENS: We understand that all the glass houses in these noted gardens (see p. 121) were erected by Mr. James Gray, Danvers Street, Chelsea, S.W.

LILIUM AURATUM FAILING: *A. B.* The plants are attacked by the Lily disease, caused by a fungus—Botrytis sp. Bulb mites are also present and some of the scales are rotting. We advise you to burn all the affected plants, and to spray the healthy ones with a weak solution of permanganate of potash. Do not plant Liliums on the same plot of ground for some seasons.

NAMES OF FRUITS: *W. G. S.* 1, Emperor Alexander; 2, Adam's Pearmain; 3 and 4, Send again later; 5, Beauty of Hants; 6, Gascoigne's Scarlet.—*W. H. B.* 1, Quarrenden; 2, Not recognised; 3, William's Favourite; 4, Juneating; 5, Duchess of Oldenburgh; 6, Irish Peach.—*Interested, Swanley.* Sugar Loaf.

NAMES OF PLANTS: *A. D. G.* 1, Cypripedium Lowii; 2, Cypripedium Stonei.—*Lewis Hawkins.* 1, An Acacia; 2, A species of Solanum, no flowers sent; 3, Leycesteria formosa; 4, Albizzia lophantha; 5, Polygonum orientale.—*R. R.* 1, Gnaphalium margaritaceum; 2, Malva moschata alba; 3, Sedum spurium; 4, Inula Helenium; 5, Omphalodes verna; 6, Achillea Millefolium, pink var.; 7, Spiræa filipendula; 8, Stachys lanata.—*H. H., Sandhurst.* Oncidium flexuosum. The black fly in Chrysanthemums can be kept down by occasional spraying with a safe insecticide, or dusting with one of the preparations used in the form of powder.—*T. H.* 1, Prunus Pissardi; 2, Cornus mas variegatus; 3, a Cupressus, we cannot tell which from the specimen sent; 4, Euonymus radicans, variegated form; 5, Philadelphus; 6, Send when in flower.—*C. B. & Co.* A variety of the common Honeysuckle, Lonicera Periclymenum.—*Fairmile.* Ophiopogon Jaburan; Arabis next week.

PARTNERSHIP: *A. C. R. W.* We certainly do not advise you to commence business before you have had some experience. As you are without any we advise your entering some nursery or gardens for at least a time, and, if possible, adding to your capital, which is very inadequate. A list of nurseries to let is to be found in our advertising columns. Messrs. Protheroe & Morris publish a monthly register of places to be let or sold.

PLANTS UNHEALTHY: *E. H. and W. B.* We have submitted the specimens to our expert, who states the injury is not caused by either fungi or insects. The peculiar appearance must be due to faulty treatment, to be determined only on the spot.

SPANISH IRISES, ETC.; *Quality.* The following varieties, with their colours, are among the best for your purpose:—Cantab, blue; Snowball, white; Princess Ida, white, primrose, and orange; Lemon Queen, canary yellow; California, deep golden; Donna Maria, azure and white. The Fuchsias should include Avalanche, Rose of Castille, Mrs. Marshall, Lord Beaconsfield, Scarcity and the species fulgens, which is very suitable for culture in bush.

TOMATOS NOT RIPENING: *G. H.* The parti-coloured appearance is not due to fungoid disease, but seems to result from a thickening of the placenta and base of the fruit which does not ripen properly. Give the plants some manure that is rich in potash. The Chrysanthemum shoots are curled similarly to those sent by *B. W.*, but yours are not affected by the rust disease; the injury in your case is caused by insect mites and green fly. Dip the shoots in tobacco water.

COMMUNICATIONS RECEIVED.—H. H., Darmstadt—A. B., La Mortola—A. O. W., de B. C.—S. W. F.—W. B., Erfurt—E. H.—A. D. W.—L. L. R.—M. H. B.—J. R., too late.—J. G.—J. W. M.—J. C.—F. H. J.—W. H. A.—A. O., with thanks. J. G. R. H. P.—C. Brinsley-Marlay, next week.—D. M. L.—B. K. B.—J. O'B.—Interested.—D. E.—Hortus.—J. M.

SHROPSHIRE HORTICULTURAL.

Exhibition at Shrewsbury.

The thirty-second annual show of this remarkably successful society was held on Wednesday and Thursday last in the beautiful grounds belonging to the society itself, and known as "The Quarry." Successful though previous Shrewsbury shows have been, this one was at least equal to any of its predecessors. In some respects it may have been even better than others, and, taken as a display, it certainly was larger, for there were one hundred entries at least in excess of those obtained in any previous year. More tents were, therefore, requisitioned, and the aggregate area covered by these was equal to 1,500 square feet in excess of last year. There were more than 400 bunches of Grapes. The receipts of all kinds at the show last year amounted to the extraordinary sum of £5,238 6s. 11d., and when our representative left the show on Wednesday evening there were indications that even this record would be excelled. The weather on the opening day was brilliantly fine, and the number of visitors correspondingly large. The amount of money offered in prizes was over £1,100, besides valuable cups, medals, and other special prizes, and it is worth while to point out that all this was awarded for skilful cultivation alone. New plants were invited in Class L, and Certificates were awarded to the best of those shown, but no money prizes were awarded to these. We, as gardeners, have every reason to be glad that the skilful cultivation of plants, fruits, and flowers is so liberally encouraged as it is at Shrewsbury, and there can be little doubt but that this and similar exhibitions exercise a good and powerful influence on British horticulture.

At the same time, when we consider the important position that the Shropshire society has obtained in the country by reason of its great shows, there appears to be some reason for suggesting that at future exhibitions a class should be provided for new plants, and liberal prizes offered for them. The society is looking for some means of introducing a new feature into its yearly displays, and it is rich enough to offer such substantial prizes for new plants as would be pretty certain to meet with a satisfactory response from exhibitors. The effect of bringing new plants to Shrewsbury would certainly be to increase the reputation of the society, which is already entitled to credit for having provided a statue to Charles Darwin in his native town, and for making many and liberal charitable gifts.

But taking the show as it is, all who have seen it will acknowledge that a better exhibition of horticultural products could hardly be made, and it should be, and it is, a very great incentive to visitors whose enthusiasm for good gardening may need encouragement. The Grapes from Lord Hastings and others, the choice fruits from the Earl of Harrington, and G. Farquhar, Esq., the vegetables from Lord Aldenham and the Duke of Portland, and the specimen plants from Messrs. Cypher & Sons, and J. Sutton Timmis, Esq., were beyond praise. The local exhibits of cut flowers and vegetables, also of wild flowers, were satisfactory as usual. How each competitor fared in the more important of the open competitions may be seen below, and it only remains for us to remark on the energy and tactfulness of the two honorary secretaries, Messrs. Admitt and Naunton, to whom we, and our readers, are indebted for the courteous help they are always ready to afford.

Fruit.

Tables Laid as for Dessert.

Of all the classes arranged for exhibits of fruit, none appears to be more popular with visitors to the show than that for tables laid out as for dessert, with choice fruits and suitable floral decorations. Though there are usually not many competitors in this class, the exhibits make a considerable display, for each table measures 10 feet by 4 feet 6 inches. The tables are covered with white cloths, and may be decorated with plants in pots not exceeding 5 inches in diameter, cut flowers (other than Orchids), and ornamental foliage. No exhibitor may show more than fifteen dishes of fruits, and the kinds must be selected from a list published in the schedule. Every exhibitor provides his own epergnes, vases, &c., required for the cut flowers, also the necessary receptacles for the plants and for the fruits. At this show there were four tables, and that awarded the 1st prize was the exhibit of the Earl of Harrington, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre). He had Muscat of Alexandria and Madresfield Court Grapes, Royal George, and Bellegarde Peaches, Pineapple, and Humboldt Nectarines, Marguerite Marillat, and Souvenir du Congrès Pears, brown Turkey Figs, Ribston Pippin and Cox's Orange Pippin Apples, and two Melons. The points awarded for each dish were as follow:—

	Possible No. of Points	Points Awarded.
Apples (1)	7	7
Apples (2)	7	7
Figs	7	5½
Grapes, Black (1)	—	7½
Grapes, Black (2)	—	8½
Grapes, White (1)	—	9½
Grapes, White (2)	—	8
Melon (1)	8	8
Melon (2)	8	6½
Nectarines (1)	8	7½
Nectarines (2)	8	8
Peaches (1)	8	7½
Peaches (2)	8	6½
Pears (1)	7	6½
Pears (2)	7	5
Beauty of flower and foliage	8	7
Harmonious blending of colour	10	9
General arrangement for effect	10	9
Total		132½

The decorations in this exhibit were flowers of Schizanthus retusus and Francoa ramosa, arranged in glasses with suitable relief. The 2nd prize was awarded to G. Farquhar, Esq., Ledbury (gr. Mr. G. Mullins), whose exhibit was awarded 119 points. This exhibitor obtained full points for one dish of Apples. 3rd, Joseph Drakes, Esq., Market Rasen (gr. Mr. T. Cooke), who obtained 115½ points. The Hon. E. L. Wood, Temple Newsam (gr. Mr. R. Dawes), who obtained the 4th prize, had very pretty decorations of Montbretias and Gypsophila paniculata fl. pl., Francoa, &c.

Collections of Fruits.

There were three classes for collections of fruit, one calling for sixteen dishes, another for twelve dishes, and the third for nine dishes. As Pineapples are now only cultivated in few gardens, they were excluded from the competition in each case. All exhibits were decorated, but special prizes being awarded for the decorations, they were not considered during the judging of the collections of fruits.

Collection of Sixteen Dishes of Fruit in Sixteen Varieties, and not fewer than Twelve kinds.—Liberal prizes, which amounted to £52, were offered in this class. There were three collections staged, and the 1st prize was won by G. Farquhar, Esq., Ledbury (gr. Mr. G. Mullins). He had excellent Black Hamburgh, Black Alicante, Muscat of Alexandria, and Canon Hall Muscat Grapes, the last-named variety being least good; marvellous fruits of Gascoyne's scarlet Seedling Apple, good Marguerite Marillat Pears, Pineapple, and Elruge Nectarines, Bellegarde Peaches, Moor Park Apricots, Kirke's Plums, Duke of Sutherland Gooseberries, Brown Turkey Figs, Bigarreau Napoleon Cherries, and Sutton's A 1. and Countess Melons. The Earl of Harrington, Elvaston Castle (gr. Mr. J. H. Goodacre), who has frequently won the 1st prize in this class, was on this occasion placed 2nd. His Grapes were of the varieties, Madresfield Court, Chasselas Napoleon, Black Hamburgh, and Muscat of Alexandria. He had good Peaches, rather small Nectarines, small Turkey Apricots, and among other dishes one of Royal Sovereign Strawberry; 3rd, the Hon. E. L. Wood, Temple Newsam (gr. Mr. R. Dawes). The prizes for decorations in this class were awarded as follow: 1st, G. Farquhar; 2nd, the Earl of Harrington; and 3rd, the Hon. E. L. Wood.

Collection of Twelve Dishes.—There were four exhibits in this class, and the 1st prize was won by J. Drakes, Esq., Market Rasen (gr. Mr. T. Cooke). His Muscat of Alexandria Grapes were large bunches, but they were far from being well coloured; Madresfield Court was extra good in size and colour, but the bunches were scarcely so shapely as usual with this choice Grape. The other varieties shown were Foster's Seedling and Gros Maroc. Peasgood's Nonsuch Apples were capital, as were Barrington and Diamond Peaches, Spencer Nectarine, Triomphe de Vienne Pears, Brown Turkey Figs, Countess Melon, and a dish of yellow Plums. The Earl of Sandwich, Hinchingbrooke (gr. Mr. Barson) was awarded the 2nd prize, and Lord Bagot, Rugeley, Staffs. (gr. Mr. T. Bannerman) was 3rd. The prizes for decorations in this class were not awarded in the same order, for the 1st prize was obtained by G. Bates, Esq., Whitfield (gr. Mr R. Grindrod), who won the 4th prize for the fruit. The winner of the 1st prize for fruit, however, won the 2nd prize for decoration.

Collection of Nine Dishes.—The best of four collections of nine dishes came from C. F. K. Mainwaring, Esq., Otley (gr. Mr. C. Wilkins), and the 2nd and 3rd prizes were awarded to Mrs. Swann, Halston Hall (gr. Mr. C. Roberts), and the Rev. T. M. Bulkeley Owen, Tedsmore Hall (gr. Mr. J. Langley). The fruit shown in the larger collections was superior.

Separate Kinds of Fruit.

Peaches and Nectarines.—There were as many as thirteen dishes of Peaches in the class for a single dish, and the cultivation they exhibited was of high merit, but not unusually so. One of the specimens in the 1st prize dish of Prince of Wales was of an astounding size. This exhibit was from Sir Geo. Meyrick, Bart. The variety Royal George, from the Earl of Lathom, Ormskirk (gr. Mr. B. Ashton), was placed 2nd, and was remarkable for its high colour. Dymond, from J. Fleming, Esq., was placed 3rd. There were nine single dishes of Nectarines, and J. Fleming, Esq., had the best in "Pineapple"; 2nd, T. F. Kynnersley, Esq., Leighton Hall (gr. Mr. W. Phillips), with the same variety, Lord Bagot's "Lord Napier" being 3rd.

Apricots appeared hardly as good as we have seen them before at Shrewsbury, but there were ten dishes of six fruits each shown in the class for a single dish.

Melons were judged by flavour, and the best green-fleshed variety out of twenty-three exhibits was Royal Jubilee, shown by A. Gibbs, Esq., Bristol (gr. Mr. T. Wilkinson). There were twenty-four scarlet-fleshed Melons, and the best was one shown by Capt. Dickin, Loppington House (gr. Mr. G. Gilbert), which was unnamed. Of twenty white-fleshed fruits, the best was shown by T. F. Kynnersley, Esq.

Plums.—The present is not a good Plum year, and exhibits were fewer than usual. J. Drakes, Esq., had the best dish of twelve Gages, and the Rev. T. M. Bulkeley-Owen the best dish of yellow Plums in Oullin's Gage. The best purple or red Plums were shown by the Earl of Harrington.

Cherries were shown splendidly, and in nine instances. The Morellos from Captain Dickin were as large as Plums.

Hardy fruits.—In a class for six dishes of hardy fruits (limited to cultivators in Salop) the 1st prize was won by Mrs. E. Alderson, Frankton (gr. Mr. G. Davies), whose Cherries and Gooseberries were the best "dishes." There were several smaller classes for fruits also limited to growers in Shropshire.

CHAMPION GRAPES.

This is the fifth year in which a Silver Champion Cup of the value of 50 guineas has been offered for the best exhibit of 12 bunches of Grapes, in four or more distinct varieties, but including not more than four bunches of any particular variety. The cup has to be won three times by the same competitor before it can become his property, and it may be remembered that last year, when Mr. Shingler, gr. at Melton Constable, won it for the third time he was unable to claim the cup because, on the two former occasions, the exhibitor was the late Lord Hastings, and last year the present Lord Hastings. The cup has only been won on one occasion by any other exhibitor, the occasion having been in 1903, when the Earl of Harrington gained the 1st prize in this class. The cup is accompanied by a sum of £20 in cash, and the remaining prizes in the class are £16, £12, £7 10s., £5, and £4 respectively. The judges are instructed to regard superior cultivation and "finish" as points of the greatest importance. Thus, a maximum of 11 points is allowed per bunch for the variety Muscat of Alexandria, whilst 10 may be given to all other Muscats (black or white) and to Black Hamburgh, but only nine points to any other variety. The schedule requires that each exhibit must be decorated with plants in pots, or cut flowers, &c., but extra prizes are awarded for the decorations, and they are not considered in the least when judging the Grapes. There were eight exhibits on the occasion under notice, and the 1st prize, including the Champion Cup, was awarded to Lord HASTINGS, of Melton Constable, Norfolk (gr. Mr. Shingler), the winner last year. There were three more exhibits in this class than there have been previously. Mr. Shingler has, therefore, the greater honour in retaining the premier position. His two bunches of Mrs. Pince were probably the best of this variety that have been staged at Shrewsbury. The points awarded each variety were as follow:—

	Maximum No. of Points.	Points Awarded.
Mrs. Pince (1)	10	8½
Muscat of Alexandria (2) ...	11	8½
Mrs. Pince (3)	10	9
,, ,, (4)	10	9½
Muscat of Alexandria (5) ...	11	8
Mrs. Pince (6)	10	9
Black Hamburgh (7) ...	10	8
Muscat of Alexandria (8) ...	11	10
Alnwick Seedling (9) ...	9	8½
,, ,, (10) ...	9	9
Madresfield Court (11) ...	10	7½
Gros Maroc (12)	9	8
Totals	120	103½

The 2nd prize exhibit was one from G. FARQUHAR, Esq., Ledbury (gr. Mr. G. Mullins), and this collection was awarded 102 points, or only one and a half fewer than Mr. SHINGLER gained. Mr. MULLINS' varieties were as follow:—

	Maximum No. of Points.	Points Awarded.
Gros Maroc (1)	9	8½
Muscat of Alexandria (2) ...	11	9
Black Hamburgh (3) ...	10	9½
Muscat of Alexandria (4) ...	11	9
Black Alicante (5)	9	8
Gros Maroc (6)	9	8½
Black Hamburgh (7) ...	10	7½
Gros Maroc (8)	9	8½
Muscat of Alexandria (9) ...	11	9
Black Hamburgh (10) ...	10	8
Muscat of Alexandria (11) ...	11	9
Black Hamburgh (12) ...	10	7½
Totals	120	102

It will be seen that in four cases the bunches shown were allowed the maximum number of points, save half a point. No. 3 bunch (Black Hamburgh) was a marvellously fine bunch, being extremely large, heavily shouldered, and splendidly coloured. The 3rd prize was won by J. W. FLEMING, Esq., Romsey, Hants. (gr. Mr. W. Mitchell), who was awarded 101½ points, and the 4th by the Earl of HARRINGTON, who had 99 points. The other exhibitors were J. DRAKES, Esq., Market Rasen (gr. Mr. T. Cooke), 83 points; J. T. CRAWFORD, Esq., Melton Mowbray (gr. Mr. W. Clanacham), 74 points; A. GIBBS, Esq., Flax Bourton, Bristol (gr. Mr. T. Wilkinson), 92½ points; and the Hon. E. L. WOOD, Temple Newsam (gr. Mr. R. Dawes), 73½ points. The 4th, 5th and 6th prizes were awarded according to the number of points gained by the exhibitors.

The 1st prize for the decorations was awarded to J. W. FLEMING, Esq., and the 2nd to G. FARQUHAR, Esq., the Earl of HARRINGTON gaining the 3rd prize.

OTHER GRAPE CLASSES.

The Grapes in the champion class, and in the collections of fruit, by no means constituted all the Grapes shown, for there were special Grape classes for most of the popular varieties.

Four bunches, two black and two white.—Out of five competitors the most successful was W. MARSH, Esq., Bath (gr. Mr. W. Taylor). He had Madresfield Court and Muscat of Alexandria, the first-named variety being remarkable for good finish, and the Muscats were very heavy bunches of moderately good finish. 2nd, Lord HARLECH, Brogyntyn (gr. Mr. T. Lambert), who showed the same varieties. 3rd, C. F. K. MAINWARING, Esq., Oteley (gr. Mr. C. Wilkins).

The following classes were for two bunches

Black Hamburgh.—There were 18 bunches shown in this class, and the best were from G. FARQUHAR, Esq., Ledbury (gr. Mr. G. Mullins), who had very good bunches of excellently coloured, fresh-looking, plump berries; 2nd, A. GIBBS, Esq., Flax Bourton, Bristol (gr. Mr. T. Wilkinson); 3rd, Lord HASTINGS, Melton Constable. The best single bunch was shown by Lord HASTINGS, among nine bunches.

Any variety of Black (Muscat) Grape.—W. MARSH, Esq., won the 1st prize in this class with the variety Madresfield Court; Mrs. Pince's Black Muscat shown by Sir GEO. MEYRICK, Bart., BODORGAN (gr. Mr. W. Pilgrim), was placed 2nd, and Muscat Hamburgh, from the Earl of HARRINGTON, 3rd.

Madresfield Court.—Out of 18 bunches exhibited in this class the best pair was shown by Lord HARLECH, and this exhibitor was followed by Col. TWEMLOW, Peakwood (gr. Mr. L. Barlow), and J. W. FLEMING, Esq., Romsey, Hants (gr. Mr. W. Mitchell).

Black Alicante.—There were seven exhibits, and the best was from W. MARSH, Esq., but two very fine bunches were shown by Sir D. DUCKWORTH KING, Bart., Countess Weir, Devon (gr. Mr. S. J. Walker); 3rd Lord TREVOR, Brynkinalt.

Any other Black variety.—Two excellent bunches of Gros Maroc of extra-sized berries shown by W. MARSH, Esq., were placed 1st, and equally good bunches of the ink-black Barbarossa from Sir GEO. MEYRICK, Bart., 2nd. There were nine exhibitors in this class, and the 3rd prize was awarded to two moderate bunches of Gros Maroc from J. W. FLEMING, Esq.

White Muscats.—There were 16 bunches of this variety shown in this particular class, the best being from the Earl of HARRINGTON, excellent in quality and finish, but only of moderate weight. The 2nd prize was awarded to two heavy bunches, imperfectly finished, from W. MARSH, Esq., and Major HIBBERT, Rugby (gr. Mr. W. Camm), obtained the 3rd prize. The Earl of HARRINGTON had also the 1st prize for the best single bunch.

Any other white variety.—W. HOWELL DAVIES, Esq., Stoke Bishop (gr. Mr. J. T. Curtis), was awarded the 1st prize for two splendidly-coloured bunches of Buckland Sweetwater. The same variety from H. A. ATTENBOROUGH, Esq., Daventry (gr. Mr. Child), was awarded the 2nd prize, and the same from the Earl of LATHOM 3rd prize.

There were seven other classes, in which competition was limited to cultivators residing in the county of Salop. First prizes in this section were secured by the Rev. T. M. BULKELLY-OWEN, Tedsmore Hall (gr. Mr. J. Langley), Lord HARLECH, Lord TREVOR, Brynkinalt (gr. Mr. W. Dawes), Capt. HEYWOOD LONSDALE, Shavington Hall (gr. Mr. J. Mills), E. P. THOMPSON, Esq., Whitchurch (gr. Mr. W. A. Webster), Major R. A. NEWILL, Admaston (gr. Mr. W. Ashwood).

GROUPS OF PLANTS.

We have never seen more effective groups of miscellaneous plants than some of those exhibited at Shrewsbury in recent years. Each exhibit being arranged on a space of 300 square feet, in a large marquee, where all the groups shown are placed in the centre in two rows, back to back, the effect on entering is of the most attractive description. On either side the immense display looks like a great tropical garden, in which the plants are arranged in as careful a manner as those in the best style of English mixed flower bedding. One of the two classes is for a group of miscellaneous plants in and out of bloom, and the other is for a group of ornamental foliage plants, Palms, Ferns, &c., excluding flowering plants. In the former class there were five exhibits, and the 1st prize was awarded to Messrs. CYPHER & SONS, Cheltenham, who have secured the premier place in so many previous competitions of this nature. The chief point worthy of note in respect to this year's groups was the absence of the cork bridge and arch arrangements that were commenced by Messrs. CYPHER, and afterwards copied by so many others that they at last became less attractive owing to their repetition. Not only have Messrs. CYPHER reverted, for a time at least, to a more simple and, we think, more natural style of arrangement, but every other exhibitor has done the same. Messrs. CYPHER'S group was, to use a paradox, like a well-regulated jungle, in which form and colour of leaf, as well as flower, were given careful consideration. It was furnished with a good background of Palms, Codiæums, Ixoras, &c., and at the front corners were pyramidal groups of plants, with smaller ones linking up these with one of rather less importance in the centre, the spaces beneath being glades filled with the choicest plants, all of which were placed in such positions that each specimen was effective. We cannot enumerate the varieties of plants used, but may remark that Ixoras, Clerodendron fallax, Odontoglossum crispum, Oncidiums, Cattleyas, and Lilium speciosum album were the most prominent of the flowering species. The 2nd prize was won by G. H. KENRICK, Esq., Edgbaston, Birmingham (gr., Mr. J. V. MacDonald), and the third by Mr. W. VAUSE, Leamington.

The best exhibit in the non-flowering group was shown by the LEAMINGTON NURSERYMEN AND FLORISTS, LTD., Leamington, and was one which called for the highest praise. The chief feature of the arrangement was in the free use made of large Codiæums, which were placed over almost the whole area at short distances, forming "dot plants," around which other plants were arranged. There were two magnificent specimens of Dracæna Victoria, and many other choice species were intermixed in the general arrangement. Messrs. CYPHER & SONS obtained the 2nd prize in this class, and J. W. LEAVERS, Esq., The Park, Nottingham, the 3rd prize.

In a local class for a group of miscellaneous plants covering 100 square feet, Mrs. SWANN, Halston Hall (gr. Mr. C. Roberts), was placed first, with a dainty exhibit.

SPECIMEN PLANTS.

Thirty Stove and Greenhouse Plants.—These plants were shown in pots not exceeding 10 inches in diameter. The 1st prize was won by T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool (gr. Mr. B. Cromwell), who won the same prize last year, and who contributes our weekly calendar on the cultivation of "Plants under Glass." The plants on this occasion were of similar species to those exhibited on the previous occasion, and displayed the same high cultivation. The most remarkable specimens were those of Ixora Duffii and Codiæum Chelsoni, both of which appeared to be quite too large for a 10-inch pot, yet they were in perfect health and condition. The specimen of Ixora, which had 27 immense trusses of bloom, was specially awarded a cultural certificate. Messrs. J. CYPHER & SONS were awarded the 2nd prize, and Mr. W. VAUSE, Leamington, the 3rd prize.

Twelve Plants.—A smaller class for twelve plants, also limited to 10-inch pots, was won by Sir A. MUNTZ, Bart., M.P., Dunsmore, Rugby (gr. Mr. H. Blakenay); 2nd, Mrs. SWANN, Halston Hall, Oswestry (gr. Mr. C. Roberts).

Fifteen Stove and Greenhouse Plants.—This class, affording nothing novel in the species employed, was well filled, and the specimens shown by Messrs. CYPHER & SONS were of the best. They had Bougainvillea Cypheri, Allamanda nobilis intermedia, S. profusa, Ixora regina, Codiæum Mortefontainense, Ixora Duffii, Chronia ixifera, Erica Aitoinona superba, Ixora Fraseri, Kentia Belmoreana, K. Fosteriana, &c. The 2nd prize was won by Mr. W. VAUSE, Leamington.

The Rt. Hon. Lord Harlech, Brogyntyn (gr. Mr. T. Lambert), took the 1st prize for six stove and greenhouse plants confined to exhibitors in the county of Salop.

Tuberous-rooted Begonias were unusually good, and the exhibit from Messrs. Blackmore and Langdon, Bath, were quite up to the "Temple" standard: particularly good were the varieties Ellen Harper, Mrs. Cockrane, Nobilis, Mrs. W. L. Ainslie, and several unnamed seedlings; 2nd, Messrs. T. S. Ware, Feltham; 3rd, Mr. Fred Davis, Pershore.

Messrs. Blackmore & Langdon were also awarded the 1st prize for six Begonias, three double and three single flowered.

T. Sutton Timmis, Esq., Allerton, Liverpool (gr. Mr. B. Cromwell), staged the best group of six Dracæuas and the best six Caladiums.

The best exhibit of four exotic Ferns was from Mrs. J. H. Slaney, Wellington, and G. Burr, Esq., Oaklands, gained the 2nd position.

Four beautifully-trained pyramid Coleus gained for Col. W. Gordon, Patchett, Shrewsbury (gr. Mr. J. Swain), the premier award; 2nd, John Baker, Esq., Shrewsbury (gr. Mr. H. Worrall).

Mrs. Swann, Halston, and T. F. Kynnersley, Esq., were placed in the order named in a class for six stove and greenhouse plants. The 1st prize included six well-flowered plants of Allamanda nobilis, Bougainvillea Cypheri, and Statice profusa.

The best half-dozen ornamental foliage plants came from T. Sutton Timmis, Esq., Allerton, Liverpool (gr. Mr. B. Cromwell), whose plants were models of good culture. He staged Codiæum aureum marmoratum, C. Queen Victoria, C. Countess, C. Mortefontainense, and two Palms; 2nd, Messrs. J. Cypher & Sons, with three Codiæums and three Palms; 3rd, Mr. W. Vause.

Cut Flowers.

Collection of Hardy Perennials, Roses excluded.—Only three competitors entered in this class, for which four prizes amounting to £25 10s. were offered. The 1st prize was awarded to Mr. M. Prichard, Christchurch, Hants, for a lovely lot of Liliums, Campanulas, Kniphofias, Crinums, &c. The 2nd award went to Messrs. G. Gibson & Co., Leeming Bar, Yorks., whose exhibit was very good, but the flowers were rather crowded. 3rd, F. Bouskell, Esq., Market Bosworth (gr. Mr. G. Harris).

In a class for a collection of Cactus or decorative Dahlias, having a frontage of 10 feet 6 inches, Mr. S. Mortimer, Rowledge, Farnham, Surrey, easily won the 1st prize. The flowers employed were of average size, clean and very fresh, and were displayed in vases, boards, and on tall Bamboo stands. The 2nd award went to Messrs. Keynes, Williams & Co., Salisbury, who had a much less bright exhibit, due largely to the too free use of Asparagus and hardy foliage. Subsequent to the judging it was found that Mr. Mortimer's collection was not in accord with the terms of the schedule; the 1st prize was therefore given to Messrs. Keynes, Williams & Co., and a special 1st prize recommended for Mr. Mortimer. 3rd, Mr. J. Walker, Thame, Oxon.

The 1st prize in another class, in which any varieties of Dahlias were admissible (similar space to the last-named class), was well won by Messrs. M. Campbell & Son, High Blantyre, N.B. The various sections of Dahlias were well represented in this group, and the flowers were arranged with great taste; 2nd, Mr. J. Walker, Thame; 3rd, Mr. W. Treseder, Cardiff.

Florists' Devices

are always shown well at Shrewsbury. The best Bridesmaids' Bouquet with Orchids, and two Bridesmaids' Bouquets (Orchids excluded) came from Messrs. R. F. Felton, Hanover Square, London. The first-named exhibit was composed entirely of long sprays of Odontoglossums and two white Cattleyas. The Bridesmaids' Bouquets were made of Madame Abel Chatenay Roses. 2nd, Messrs. Perkins & Sons, Coventry. 3rd, Messrs. Gunn & Sons, Olton.

The best Bride's Bouquet, which was composed largely of Odontoglossums, came from Messrs. Perkins & Sons of Coventry.

Messrs. Perkins also beat four competitors in a class for a bouquet of flowers for the hand; 2nd, Mr. W. J. Garner, Hale, Altrincham.

Messrs. R. F. Felton, Hanover Square, London, had the best bouquet of flowers (Orchids excluded), with pink Carnations. Messrs. Perkins & Sons being 2nd, and Mr. John Wilson, Hereford, 3rd.

There were seven entries for a shower bouquet, and after a very close contest Messrs. Perkins & Sons were placed 1st, and Mr. W. Treseder, Cardiff, 2nd

Mr. W. J. Garner exhibited the best "feather-weight" bouquet, which consisted of Oncidiums, Chironia ixifera, &c.; 2nd, Messrs Perkins & Sons.

Messrs. R. F. Felton won the 1st prizes for the best floral harp and floral cross, Messrs. F. E. Smith & Co., Belfast, being 2nd in each case.

O. Robinson, Esq., Alderley Edge (gr. Mr. J. Nixon), beat Messrs. R. F. Felton in a class for a floral wreath.

For an arrangement of cut flowers suitable for a dinner table (4 feet by 4 feet), open to ladies only residing in the county of Salop, Mrs. F. D. Deakin, Belle Vue, was placed in front of seven competitors.

Sweet Peas.

In a class very similar to the above, but in which the flowers used were to be Sweet Peas. Mrs. F. C. Burd, Newport House, beat Mrs. J. Nixon, Alderley Edge, who was placed 2nd. There were 13 competitors in this class.

Liberal prizes were offered by Mr. Robert Sydenham, Birmingham, for flowers shown in his rustic table decorations. There were 14 exhibitors, and after a very close contest Mr. E. Deakin, Hay Mills, Birmingham, was awarded the 1st position for a very pretty table, on which light-coloured flowers were employed; 2nd, O. Robinson, Esq. (gr. Mr. J. Nixon).

In a class for 18 distinct varieties arranged in bunches of about 30 to 40 stems, on a space of 8 feet by 3 feet 6 inches, and for which a 1st prize of £3 and a gold medal were offered, the first prize was won by Mr. J. Gibson, Duns., N.B., followed by Mr. T. Duncan, Duns., N.B.

The first and second prizes offered by Mr. Henry Eckford, Wem, Salop, for eighteen distinct varieties were won by Mr. A. Malcolm, of Duns, and Mr. T. Jones, of Ruabon, respectively. The 1st prize lot included beautiful examples of Evelyn Byatt, John Ingman, and Henry Eckford. Captain Aitken, Duns, had the best dozen vases of Sweet Peas.

Roses.

In a class for a collection of Tea, Hybrid Tea and Noisette Roses, arranged on a space of 4 feet by 4 feet, Mr. John Crossling, Penarth Nurseries, S. Wales, took the lead with a beautiful lot of flowers. 2nd, Messrs. J. Simpson & Sons, Dundee.

Carnations.

In a class for cut Carnations and Picotees, shown with their own foliage and buds, and not dressed in any way, Messrs. M. Campbell, High Blantyre, N.B., took the lead, Mr. C. H. Herbert, Acocks Green, being a good 2nd.

In a similar class, but smaller than the last-named, W. H. Banks, Esq., Kington (gr. Mr. G. Bamford), was first with a very bright collection, Mr. T. Jones, of Ruabon, being 2nd.

The best twelve vases of Carnations or Picotees were staged by Mr. A. R. Brown, King's Norton. His flowers of Chaucer (buff selt), Daffodil (yellow), Iris (yellow round-edged with crimson) were remarkably good. 2nd, Mr. C. H. Herbert, Acocks Green.

Vegetables.

Whilst there were a few collections staged by quite new competitors that were below the usual Shrewsbury quality, these were excusable, because too evidently the products of novices in the art of vegetable exhibition. No doubt, after seeing the superb quality found in the best collections, they went home wiser men. Let us hope before again entering the field as competitors they have taken to heart the object lessons furnished. With regard to the best collections, especially those from the old competitors, they were splendid. Of some it is fair to say they have never been excelled.

Trade Prizes.—Taking these in schedule order, first comes the class for nine distinct varieties, which all the competitors happily read to mean "kinds," for which Messrs. Jas. Carter & Co. offered in six prizes a total sum of £17 10s. There were but six entries, each competitor getting a prize. A good first, however, was that invincible grower, Mr. A. Beckett (gr. to Lord Aldenham, Elstree, Herts). His collection comprised autumn Giant Cauliflowers, Ivory-white Celery, Holborn Giant Leeks, Snowdrop Potatos, Telephone Peas, Ailsa Craig Onions, Duke of York Tomatos, Scarlet Emperor Runner Beans, and Perfection Carrots. Mr. B. Ashton (gr. to the Earl of Lathom, Ormskirk), another first-rate grower, was a good 2nd, having very fine Quite Content Peas, Onions, Carrots, Celery, &c., in his collection. Mr. F. Barratt, Overton-on-Sea, was 3rd.

Messrs. Sutton & Sons' Prizes.—These were offered for collections of nine distinct kinds, were six in number, and amounted to £8 17s. There were eight lots staged, a few also not turning up at the last moment. Here, Mr. Beckett's chief antagonist in the past as an exhibitor, Mr. James Gibson (gr. to the Duke of Portland, Welbeck Abbey, Worksop), the writer of our Vegetable Calendar, was a splendid 1st, having quality of the finest character, such as was worthy of the competitor. It was a matter for regret that these "Greeks" did not furnish the special interest of a keen tug-of-war. Mr. Gibson's collection comprised autumn Giant Cauliflowers, Prizetaker Leeks, Solid White Celery, Superlative Potatos, Best of All Runner Beans, Eclipse Tomatos, Ailsa Craig Onions, Gladstone Peas, and New Intermediate Carrots. Mr. J. Hudson, Leicester, came 2nd, having good Autocrat Peas, Prizewinner Runner Beans, Ailsa Craig Onions, with other good things, in his collection. Mr. Ashton was 3rd.

R. Smith & Sons, Worcester, offered five prizes for collections of nine kinds, but the response was limited. Mr. A. Deakin, Hay Mills, was 1st, and Mr. Ashton 2nd. Quality here was rather moderate, although the total value of the five prizes was £11 15s.

Messrs. Webb & Sons' Prizes.—These again were six in number, and totalled £16 10s. The result was seven collections, each of eight kinds. In this case a younger competitor, Mr. Dymocke (gr. to G. D. Faber, Esq., Wallingford) was well first, the capital quality of his exhibits evidencing a master grower. Viceroy Tomatos, Duke of Albany Peas, Ailsa Craig Onions, Exhibition Runner Peas, Windsor Castle Potatos, Solid White Celery, fine Cauliflowers, and Leeks made up the collection. Mr. Ashton was 2nd, having very fine Masterpiece Peas, Sensation Tomatos, Jubilee Runners, New Guardian Potatos, Cauliflowers, with other kinds. Mr. G. Bastin (gr. to Sir A. Henderson, Bart., Buscot Park, Hungerford) was 3rd. The same firm's prize for a single dish of Tomatos brought five lots, Mr. E. Winchester, Longbridge, having the best in Viceroys.

Mr. E. Murrell's Prizes.—These were five in number, and offered for collections of eight kinds. Mr. R. C. Townsend, Slough, was placed 1st, having in his collection fine Onions, over large Potatos, good Peas, Tomatos, and Beets. W. L. Sewell, Esq., Orleton Hall, was 2nd.

Messrs. W. Bull & Sons' Prizes.—These were quite new here, and in six prizes included a sum of £14 10s. But there was added to the first prize of £5 a silver cup valued at 15 guineas, and to the second prize of £2 a silver cup valued at five guineas. To secure the former trophy was, however, regarded as a coveted prize, hence Mr. A. Beckett seems to have so far thrown his strength here that his collection of nine kinds was of unexampled excellence; indeed, we have never, even at Shrewsbury, seen a finer lot, it was quite without a flaw. There was a centre-back of ten handsome, pure white Cauliflowers, flanked on one side by superb Prize Pink Celery, and on the other with beautiful monstrous Leeks. In front were Alderman Peas, Windsor Castle Potatos, Ailsa Craig Onions, Runner Beans, Favourite Tomatos, and new intermediate Carrots. Mr. Dymocke came a capital 2nd, having very fine Ailsa Craig Onions, Duke of Albany Peas, Runner Beans, Superb Leeks, Tomatos, and Potatos. Mr. Barson (gr. to the Earl of Sandwich), Hinchingbrooke, was 3rd.

Mr. R. Sydenham's Prizes.—These were numerous, including five for collections of eight kinds of vegetables, and about 70 others in small sums for treble, double, or single dishes. The first prize in the collection class was taken by Mr. W. Pope (gr. to the Earl of Carnarvon), Highclere Castle, with fine intermediate Carrots, Windsor Castle Potatos, Perfection Tomatos, good white Celery, Cauliflowers,

Onions, and Parsnips. Mr. F. Barratt, Overton-on-Sea, was 2nd. In the single dish classes, Mr. R. A. Horsford, Llangollen, was 1st for Onions, Turnips, Leeks, Runner and Dwarf Beans, and three dishes of Peas. Mr. W. Pope was 1st for Tomatos, Celery, and Carrots, and he had also several second prizes. As additional valuable prizes in kind are offered to those who obtain the highest number of points in all Mr. Sydenham's classes, it is interesting to record that Mr. Pope had 44, Mr. Horsford 43, and Mr. F. Barratt 36.

Society's Classes.—In the class for twelve distinct kinds for which the society offers the relatively low sum of 4s only, in three prizes, Mr. J. Gibson was here a capital 1st, having a collection of special excellence, much deserving higher value. Gladstone Peas, Perfection Tomatos, Ideal Cucumbers, Prize-winner Runners, Presentation Leeks, Sucham Prize Celery, grand Cauliflowers, Onions, Beet, Parsnips, Turnips and Potatos, made up a faultless collection. Mr. G. Martin was 2nd, and Mr. J. Hudson 3rd. In the class for nine kinds, Mr. Mills (gr. to Captain H. Lonsdale, Shawington Hall) was 1st. Space will not admit of reference to the smaller classes, or to the remarkable display of cottagers' vegetables, always here so exceptionally good.

Messrs. Dobbie & Co., Rothsay, set up, as is now customary with them, a fine collection of 50 varieties of early Potatos in baskets, none large, but all of very high excellence. White varieties included British Premier, Midlothian Early, Eureka, Southern Queen, Peacemaker, The Provost, Dalmeny Early, Milecross Early, and Sir J. Llewelyn; and of coloured varieties, Reading Russet, Beauty of Hebron, Eightyfold, King Edward VII., Crimson Beauty, Rouge Royal, Queen of the Veldt, and Purple Perfection.

Non-Competitive Exhibits.

Messrs. Dobbie & Co., Rothesay, had an extensive exhibit of flowers, representing their excellent double and single Marigolds, also Sweet Peas and Cactus Dahlias. In addition, the firm showed about 50 small baskets of Potato tubers, in which there were some of the varieties that proved best in the recent trials at Marks Tey, such as Midlothian Early, which, although somewhat similar to Duke of York, is stated to be distinct. Southern Queen and some first-class standard varieties were also included.

Messrs. Wallace & Co., Kilnfield Gardens, Colchester, had a magnificent group of hardy flowers, in which the principal feature was a collection of new seedling Montbretias, most of which have larger flowers and better posed on the spikes than the older type. Prometheus is now pretty well known, but Lady Hamilton, of orange-yellow colour, is quite new, also Hereward (yellow) and Lord Nelson (crimson), and others raised by Mr. Davison, at Westwick.

Mr. Albert Myers, Sutton Lane Nurseries, Shrewsbury, showed a pretty group of Zonal Pelargoniums, Coleus, &c., arranged with Abutilon Savitzii and other decorative plants for effect.

Messrs. Dicksons, Chester, had a great bank of hardy flowers, in which most of the species now in flower appeared to be represented. Lilium auratum and Romneya Coulteri were outstanding features of the group.

Messrs. Hobbies, Ltd., Dereham, Norfolk, had an exceedingly long exhibit along the centre of one of the smaller tents. It was composed of climbing and pillar Roses, shown as growing plants, also Dahlia flowers, cut Roses, &c. Cactus Dahlia Princess Mary, of rich salmon-pink colour, is an excellent new variety, and other new ones were included.

Mr. Jno. Cooper, Hardy Plant Nursery, Chipping Norton, exhibited flowers of a good crimson-flowered border Carnation named Roy Morris.

Messrs. Green & Sons, Olton, Birmingham, made a gorgeous display of perennial Phloxes, in which there were numerous varieties of the choicest merit, and many of them very brilliant in colour. The cultivation exhibited was remarkable.

Messrs. Lang & Mather, Kelso, N.B., exhibited flowers of a number of varieties of tree and border Carnations.

Messrs. Thomas Rivers & Son, Sawbridgeworth, Herts, brought some of their choice orchard house fruit trees in pots. Every tree was well laden with fruit, whether of Peach, Nectarine, Plum, Cherry, Apple, Pear, or Grape. The most excellent tree was an extra large specimen of the Dagmar Peach, on which the fruits appeared to have been placed by rule.

Messrs. Richard Smith & Co., Worcester, showed plants of Coniferæ, variegated Hollies, Clematis, &c., in pots, some of the "coloured" Conifers being excellent specimens.

Messrs. Pritchard & Sons, Shrewsbury, made an exhibit of Ferns and other foliage plants, also of Sempervivums, &c.

Messrs. Hewitt & Co., Solihull and Birmingham, displayed a very brilliant group of hardy flowers, in which some of the showiest varieties appeared to excellent advantage.

Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield, had a large exhibit, and one of a kind otherwise but poorly represented at this show. Some of the Cattleyas, Cypripediums, Oncidiums, Miltonia Crashleyana, &c., were good; also flowers of tree Carnations, Fig trees in pots, Abutilons, Codiæums, &c.

Messrs. G. Stark & Sons, Great Ryburgh, Norfolk, exhibited a much variegated dwarf Nasturtium named "Ryburgh Beauty," also Sweet Peas, &c.

Mr. Robert Bolton, Warton, Carnforth, had an exceedingly good display of Sweet Peas in infinite variety.

Messrs. G. Peed & Sons, Roupell Park Nurseries, West Norwood, London, exhibited a group of Caladiums, which consisted of good specimens of large size. The best plants were Oriflamme, Duchess of Teck, Rio de Janeiro, and Raoul Pugno.

Messrs. Bakers, Wolverhampton and Codsall, made the largest exhibit of hardy flowers in the show. It was arranged on the grass in the great fruit tent, and the sorts were massed together in considerable quantities, so that in many instances they appeared as if growing clumps. There were Gladioli, Liliums, Roses, early-flowering Chrysanthemums, Montbretias, Phlox, Hollyhocks, Kniphofias, &c. Messrs. Bakers also showed a charming arrangement of Dahlia flowers, in which most of the types of this flower were shown in various receptacles for the furnishing of good effect. Varieties of the Pæony-flowered Dahlias are very showy, but not of the florist's form.

Messrs. W. Cutbush & Sons, Highgate Nurseries, Middlesex, made a good display of Carnation flowers, most of them "tree" varieties; also plants of Verbena hybrida, "Maiden's Blush," Snowflake, &c., and of the new dwarf Polyantha Rose Mrs. W. H. Cutbush.

Messrs. Webb & Sons, Stourbridge, had an extensive display of indoor flowering plants and cut flowers. Tuberous-rooted Begonias were meritorious, and Sweet Peas, Asters, Gladioli, Carnations, and tall spikes of Hollyhocks were the best of the cut flowers. The new Tomato, "Webb's Emperor," was well shown on arches at the back of the stand.

Mr. Edwin Murrell, Portland Nurseries, Shrewsbury, occupied a large space with a rich collection of cut Roses arranged in bamboo stands, vases, and boxes. He also staged some seedling Gladioli of much merit.

Messrs. Clibrans, Hale, Altrincham, staged a group of double and single-crested Begonias and some well-plumed Celosias of a good strain.

Messrs. Isaac House & Sons, Westbury-on-Trym, Bristol, sent a large bank of hardy flowers, consisting of Delphiniums, Phloxes, Kniphofias, Gaillardias, and Pentstemons.

From The King's Acre Nurseries, Hereford, came an instructive collection of fruit trees in pots, and gathered fruit. In the first-named were noted excellent examples of Marie Louise and Durondeau Pears, The Queen, James Grieve, and Peasgood's Nonsuch Apples, and Muscat of Alexandria and Gros Maroc Grapes. The gathered fruit included good dishes of Apricots, Melons, Plums, and Gooseberries. The same firm also displayed Roses in variety in another part of the same tent.

Messrs. Jones & Sons, Shrewsbury, staged a handsome collection of Carnations, Violas, Show and Cactus Dahlias, and mixed hardy flowers, together with a large collection of Sweet Peas and a table decorated with fruit.

Messrs. Jarman & Co., Chard, Somerset, set up a nice collection of Cactus and Pompon Dahlias, Roses, Centaureas, and some very good vegetables.

Messrs. Rogers & Co., Leamington, exhibited four varieties of large, well-grown Onions.

Messrs. W. and J. Brown, Stamford, Peterborough, showed a collection of hardy cut flowers, consisting largely of Roses, dressed Carnations on boards, and half-a-dozen splendid flowers of Magnolia grandiflora.

Mr. H. Eckford, Wem, staged about a hundred vases of Sweet Peas in capital condition.

Half-a-dozen large baskets filled with double bedding Begonias came from Messrs. Blackmore & Langdon, Twerton-on-Avon, Bath. The varieties Argus, Gladiator, and R. Parsons were smothered with flowers.

Mr. John Forbes, Hawick, N.B., showed a mixed collection of border flowers and Carnations.

An uncommon group of hardy flowers and choice Water Lilies came from Mr. Amos Perry, Winchmore Hill, N.W. A few varieties of hardy Ericas also came from the same exhibitor.

Mr. Joseph Lambert, Dalmeny, Southport, had Carnations arranged in rustic stands, &c.

Double and single-flowered zonal Pelargoniums were well shown by Mr. Vincent Slade, of Taunton. His best varieties were M. Alf Erckemer, Hall Caine, Barbara Hope, Enid, and Chaucer.

Bees, Ltd., Wapping Buildings, Liverpool, showed a group of hardy flowers.

Mr. A. W. Thorpe, Lichfield, sent a representative collection of border Chrysanthemums.

Mr. W. L. Pattison, Cherry Orchard, Shrewsbury, sent Violas arranged in sprays.

A small but good collection of Cactus, Pompon and single Dahlias came from Messrs. Joseph Cheal & Sons, Crawley, Sussex.

Rustic stands decorated with Sweet Peas came from Mr. Robert Sydenham, Birmingham.

Messrs. Tom B. Dobbs & Co., Wolverhampton, occupied a space on the lawn with an arrangement of flowering plants, rustic arches, and arbours.

Honorary Awards.

Large Gold Medals

were awarded to Thomas Rivers & Son, Sawbridgeworth; The King's Acre Nurseries, Ltd., Hereford; and Baker's, Ltd., Codsall.

Small Gold Medals

were awarded to Mr. Amos Perry, Winchmore Hill, N.; Gunn & Sons, Birmingham; J. Peed & Son, Norwood; Robt. Bolton, Carnforth; Hobbies, Ltd., Dereham; Jarman & Co., Chard; Jones & Son, Shrewsbury; and Dobbie & Co., Rothesay.

Silver-Gilt Medals

to Hewitt & Co., Ltd., Solihull; R. Smith & Co., Worcester; Tom B. Dobbs & Co., Wolverhampton; Hugh Low & Co., Enfield; Henry Eckford, Wem; W. Cutbush & Son, Highgate; Dicksons, Ltd, Chester; R. Wallace & Co., Colchester; E. Webb & Sons, Stourbridge; A. Myers, Shrewsbury.

Silver Medals

to John Forbes, Hawick; J. Lambert, Southport; A. H. Thorpe, Lichfield; Vincent Slade, Taunton; J. Cheal & Son, Crawley; W. J. Brown, Peterborough; Robt. Sydenham, Birmingham; Isaac House & Son, Bristol, and Clibrans, Altrincham.

Bronze Medals

to Laing & Mather, Kelso; Blackmore & Langdon, Bath; Bees, Ltd., Liverpool; G. Stark & Son, Great Ryburgh; W. L. Pattison, Shrewsbury; Pritchard & Sons, Shrewsbury; Rogers & Co., Leamington Spa; and R. F. Felton, Hanover Square, W.

Certificates of Merit

were awarded to Mr. W. Treseder, for Dahlia Peter Treseder; Messrs. Blackmore & Langdon, for Delphinium Harry Smetham; Hobbies, Ltd., Dereham, for Ampelopsis Henryana, Rose Hiawatha, and Cactus Dahlias, Princess May, Queenie, and Williamsoni; Messrs. Keynes Williams & Co., Salisbury, for Cactus Dahlia, Kathleen Bryant, Coradog; J. Cooper, Chipping Norton, for Border Carnation Roy Morris; Baker's, Codsall, for Viola, Jessie Baker; R. Wallace & Co., Colchester, for Montbretias Westwick, Herewood, Lord Nelson, and Lady Hamilton; Amos Perry, Winchmore Hill, for Calla Mrs. Roosevelt, and Dobbie & Co., Rothesay, for Cactus Dahlia Dreadnought.

SOBRALIA AMESIAE, FLOWERS YELLOWISH-BUFF FLUSHED WITH ROSE, FROM MAJOR HOLFORD'S COLLECTION.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London E.C.

THE

Gardeners' Chronicle

No. 1,027.—SATURDAY, September 1, 1906.

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ILLUSTRATIONS.

FORCING FRUIT TREES IN POTS.

THE culture of fruit trees in pots is not such a novelty as it was some few years ago. Nevertheless, I think many growers hesitate before embarking upon this system of fruit growing for various reasons, peculiar, perhaps, to their own cases. Some may think that the crops will not be commensurate with the pains and labour bestowed on them. To such let me at once state that this, providing the pot trees are given suitable conditions, is a mistaken notion. Others may think that pot trees are not of a lasting character. Here, again, a popular error is made, as I have proved after several years' experience. As an instance of their long life I may state that the original tree, in a pot, of Lord Napier Nectarine introduced into cultivation by Messrs. Rivers and Son more than 30 years ago only succumbed to old age about three years since. Some persons imagine that the flavour of forced fruit from pot trees is not of the first quality, and I have often had questions on this point put me. This also is a mistaken idea; the flavour is, in fact, often better from pot-trees than from those grown upon the planted-out system. One distinct advantage lies in the fact that a greater range of varieties of any given kind of fruit can be cultivated under the pot system than under any other, and, thereby, a better succession can be maintained. Everyone admires large, finely-trained trees of Peaches and Nectarines which bear heavy crops of fruit, but there is the disposal of such large crops to be considered whilst the fruit is in the best condition for dessert purposes, as the fruits ripen more or less at one time, but even where several trees of any given variety of fruit are forced in pots, it is not often that they ripen simultaneously. Again, when a planted-out tree has ripened its crop of fruits the plant-house cannot be turned to such further uses as when pot trees are grown. In this matter, therefore, the latter have another distinct advantage. At Gunnersbury we have adopted the forcing of trees in pots for several years, and find that it answers admirably. At first I was doubtful if it would be a success. I had, in common with many other gardeners, seen the splendid examples of fruit trees in pots staged at the Temple Show and elsewhere by Messrs. Rivers and Son. I took up the forcing of fruit trees in pots at the instigation of Mr. Leopold de Rothschild, who had so often seen the trees staged by the firm just named. After a year's experience I plainly saw there was more value in the system than I had at first imagined, and the number of trees for forcing in pots was, therefore, extended, and the number of houses devoted to their culture also. With us it is now reduced to a regular system to suit the special supplies required. We usually have dessert Cherries ripe by the end of April. Our Nectarines begin to ripen the first week in May, and these are closely followed by Peaches and Plums. It is to these four kinds of fruit that I wish to direct my remarks. When once we commence to pick ripe fruit we aim at getting a succession throughout what is termed the "London season," in other words, to the end of July, or thereabouts. Of course, during the latter part of this period the trained trees in the borders also come into bearing. Indoor Cherries are finished by the middle of June, when the outdoor crop becomes available.

CHERRIES.

Of these fruits we find the earliest and most reliable variety to be Guigne d'Annonay, and this is very closely followed in its period of ripening by Belle d'Orléans. The former is quite sweet and good when of a dark red colour, but it is perfection when black. It is of medium size, and it has a small stone. Frogmore Early Bigarreau and Governor Wood follow in close succession; both of these are very fine in flavour and very similar in appearance. Early Rivers and Bigarreau de Schrecken are the two finest black Cherries for pot culture, both kinds being large, fleshy, and of first-class flavour. In addition, we grow a few trees of May Duke, as it produces much pollen, which is useful for fertilising purposes.

NECTARINES.

We rely entirely upon Cardinal for our earliest crops of these fruits. It is fully ten days earlier in ripening than Early Rivers, which is itself the same number of days in front of Lord Napier. Cardinal, as indicated by its name, develops a remarkably fine colour. It is a heavy cropper grown in pots and the fruits are of fine flavour, but it possesses a somewhat clingstone character. This defect is also to be detected in Early Rivers, but, in my opinion, it is no detriment in either case. Early Rivers, when fully matured in pots, is a grand fruit. To follow these we have both Lord Napier and Advance. The latter variety is not so well known as its merits entitle it to be. Next, Pineapple and Humboldt come into use. Both of these kinds crop freely, and their good flavour is well known, whilst they both keep well when ripe.

PEACHES.

Our two earliest Peaches are Duchess of Cornwall and Duke of York, both reliable as good croppers. I have, however, yet to learn which is really the better of the two; the last-named has the best reputation. Amsden June is also a useful variety, but it is not always reliable; neither is Hale's Early, a good and handsome Peach where it thrives well. I am very partial to Dr. Hogg as a second early variety; with us it always crops freely. It is also valuable for its abundant pollen. As a flowering plant only it is most ornamental. Peregrine, one of the more recent of Messrs. Rivers' introductions, promises well. It sets freely and possesses an excellent constitution, so far as I have been able to form an opinion.

PLUMS.

Of Plums the earliest is Early Prolific. This usually ripens about the middle of May, and although it is not of first-class flavour it is valuable from its earliness as well as for its free cropping qualities. To follow, I find nothing equal to Early Transparent Gage, which is a most valuable variety to grow, both for its high-class flavour and for the freedom with which it crops year after year; rarely does it fail. Grown in the same house with Cardinal Nectarine, it ripens about 14 days later. Golden Transparent Gage, which, in my opinion, is the finest of all Plums for pot culture, succeeds it. This variety is likewise a good cropper, whilst for flavour and appearance it is unsurpassed. Two other excellent kinds are Kirke's and Jefferson's. Of these two I prefer the latter; both well-known dessert varieties. As a later kind we grow Reine Claude du Comte d'Althann, which is a very fine Plum when fully matured. I would strongly recommend the cultivation of Plums in pots, for they are most amenable to this method of cultivation. They succeed well under the same treatment as Peaches and Nectarines, whilst for fruit-bearing qualities they are not to be surpassed.

ORCHARD HOUSES.

The best possible form of house for the forcing of fruit trees in pots is the span roof. Our houses face nearly south and north, and I think, all things considered, it is the better position, for the southern side thus ripens earlier, and thereby a succession is ensured. For later crops I think houses facing east and west are preferable, but it is not an essential point. Lean-to houses are not to be recommended, for in these the plants have a tendency to grow towards the light. Three-quarter span-roofed structures are a good medium between the other two, especially if back ventilation is provided. It is essential to secure a free circulation of air, for nothing is more harmful to these fruit trees than a close, confined atmosphere. Our span-roof houses have provision made for side ventilation in a continuous manner from end to end. This is provided by means of wooden shutters about 20 inches in width. These are hung, not at the top, as is the common fashion, but at the bottom; thus the inlet of a cold current of air is greatly overcome. Even in cold, windy weather side ventilation can

be given without any fear of evil results. Above these ventilators we have glass, but this is a fixture, varying in width from 18 inches to 2 feet. The glass is butted end to end, being only bedded at top and bottom, thus the maximum amount of light is ensured. But three or four courses of brickwork appear above the ground, and upon this rests the woodwork to which the side ventilators are hinged. The top ventilation is provided by means of small or medium-sized lifting lights, at intervals to the extent of about one-fourth of the entire length of the roof. Continuous top ventilation is not, in my opinion, needed; it would, I think, create more draught than is advisable. The houses should be lightly constructed, the present system of tie-rods in a great measure dispense with much heavy woodwork. I am not an advocate of very cheap houses of inferior material, but I do most certainly disapprove of useless expenditure in erections intended for utilitarian purposes. Houses of ornamental construction are not needed for practical cultivation. Our glass is cut all to one size, viz., 15 inches by 20 inches, and it is always of good quality, for this I consider essential. No staging is provided, nor is any required, for the use of stages only complicates matters. We stand our plants upon a gravel bottom, using slates, tiles, or bricks to place under the pots when required. If the house be a wide one, i.e., one in which the trees cannot easily be attended to by means of one central path, two paths are provided with a row of trees—the dwarfest—next the front. In other houses not so wide a central path only is provided. Brackets and swing-shelves are fixed, these being used for Strawberries. In the narrower houses the pipes are fixed around the sides, one above the other, with a smaller pipe (3 inches) sunk near the path. In the wider houses the pipes are laid flat around the sides, with room between them for one row of trees; in these the central bed has a 4-inch flow and return pipe around it. A sufficient quantity of piping is provided to afford the requisite temperature without making the pipes unduly warm. For making the paths gravel is used, the aim being to secure a moist bottom throughout. Large rain-water tanks are provided under the beds in order to catch all the rain-water possible. I consider the use of rain-water for these trees most essential. *James Hudson.*

(To be continued.)

GLADIOLUS "MRS. CECIL BARING."

THIS variety was shown by Messrs. Kelway & Son at the meeting of the Royal Horticultural Society on August 14, being one of four varieties which gained Awards of Merit. The flowers are of very large size and of lemon-yellow colour, except the base of the lower petal, which is densely spotted with red. This lower petal forms a distinct lip to the flower, whilst the uppermost petal is much reflexed. The flower-bearing portion of the spike was 18 inches to 2 feet long.

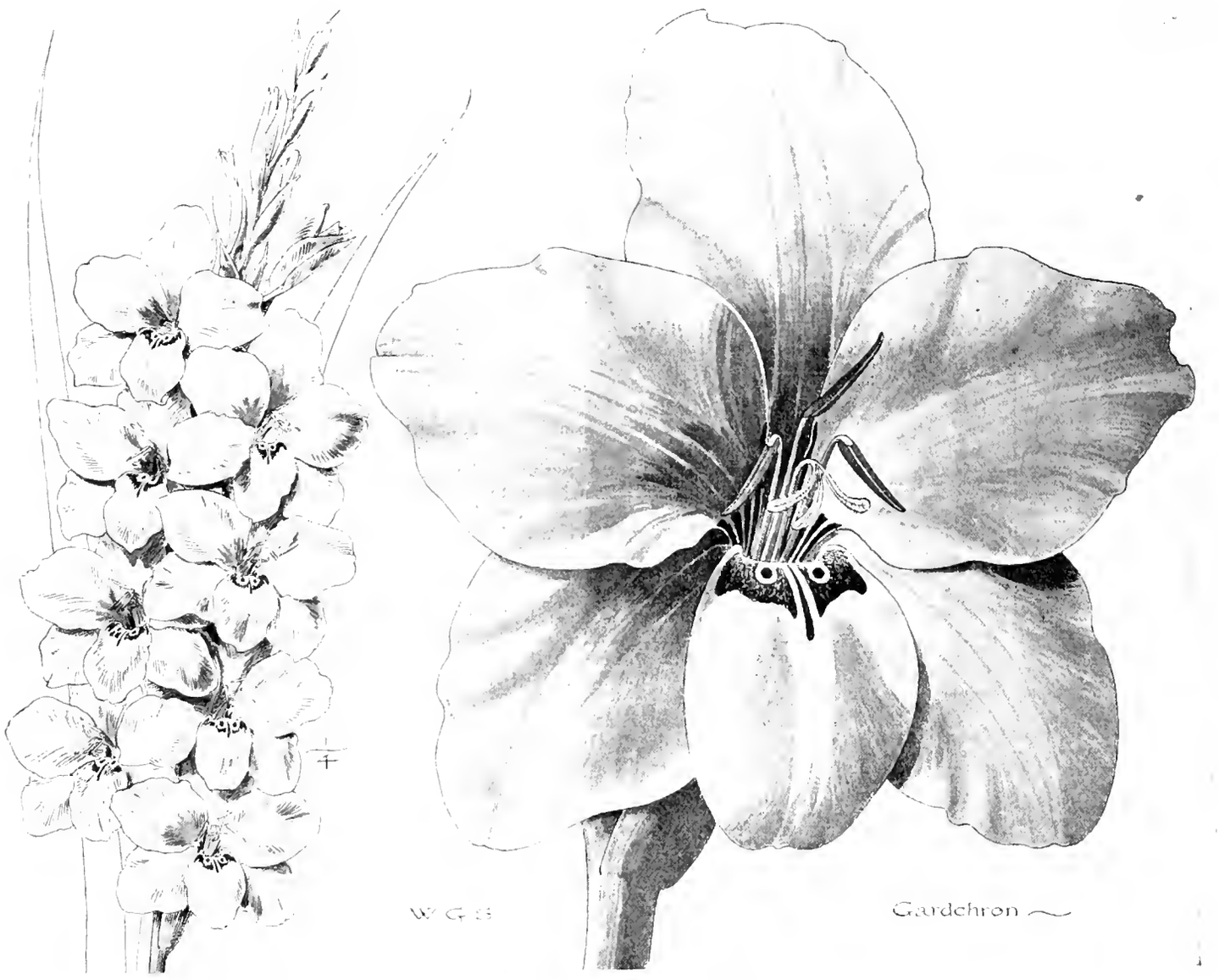

FIG. 63.—GLADIOLUS "MRS. CECIL BARING": COLOUR OF FLOWERS LEMON-YELLOW, SPOTTED WITH BRIGHT RED.

NEW OR NOTEWORTHY PLANTS.

HEMEROCALLIS FULVA, NEW VARIETIES AND HYBRIDS.

HEMEROCALLIS fulva shows many fine natural varieties; the double forms, such as disticha fl. pl. and Kwanso fl. pl., from Japan, are well known in gardens. Some years ago Mr. C. Sprenger introduced certain new and very fine varieties from Central China. The first was the unfortunately named "maculata," from Shen-shi. The flowers are larger, brighter in colour, and the blotch more marked than in the common type. The plants are here a week later in flowering, and seed freely, and have given many very distinct and interesting hybrids; as far as I know, the first of the fulva class, of which I will speak later on.

The second form is var. "Cypriani," from Hupeh, very distinct, dwarfer than the common fulva and than maculata, and very floriferous. The flower is coppery red with a golden centre and a well marked golden line down the middle of the petals; the form is gracefully reflexed

The third new variety is "hupehensis"; this is the brightest of all, flowers very reflexed and undulating, bright coppery red, with a yellow throat.

H. × fulcitrina (fulva maculata × citrina), the first hybrid from fulva crossed with another Day Lily. Fulva maculata is the seed parent, and H. citrina, a Chinese species introduced some years ago, is the pollen parent. It is a fine series of plants, showing all shades, from light coppery red to dark yellow; the petals long and narrow as in citrina, or even broader than the seed parent All these hybrid varieties are good additions to our hardy plants. *William Muller, Vomero, July 27, 1906.*

A CORNISH TRIP.

STRANGE to say, though an ardent Fern-hunter for nearly 30 years, I had never set foot on Cornish ground until recently, Devonshire, the Lake District, and Scotland being selected year after year, more often than not for other reasons than ferny ones. My old friend Mr. George Bunyard gave me, however, such a glowing description of waist-high Hartstongues and Blechnums and shoulder-high Lady and Male Ferns, to say nothing of first-storey-high Tree-Ferns in all their native glory, though transplanted to Antipodean paradises, that I half resolved to go and see for myself, and the other half of the resolution was clapped on instanter when I found I could have as a congenial companion Mr. George Nicholson, of Kew Gardens fame. Despite my warning that he would be unutterably bored, as a ferny lane a mile long would take me half a day to investigate, he did not quail at the prospect. As a result, Falmouth was selected as our destination pending the choice of a still fernier one, and eventually we settled down in Penryn, a couple of miles outside that ancient port. Falmouth itself is hardly a Fern paradise, and yet, curiously enough, I found a pretty crenate marginate variety of Hartstongue snugly ensconced in a chink in a stone wall facing the main road. Find No. 1. The river Fal, like all the so-called Cornish rivers towards the Lizard, is really an arm of the sea stretching inland, and, in this case, fetching up short at Truro with a meandering series of cuttings and docks adjacent to a bridge, which indicates, presumably, a river proper on a small scale higher up, though a sudden thunder plump prevented us from landing and ascertaining the fact. The streets of Falmouth are tortuous, narrow, and steep, the town seeming to be built on a switchback system of levelling, and as some 30 of our finest ironclads and a swarm of destroyers happened to be in port the atmosphere was nautical in the extreme, and a glimpse of the port itself showed it to be pervaded with little boats and big boats, jolly boats, and dinghies impelled by electricity and petroleum, steam and elbow-grease in all directions, laden with cabbages, conger-eels, loaves of bread, and all kinds of comestibles and probably drinkables, which were being transferred from terra firma to the fleet aforesaid. All this, however, is presumably common to most seaports, but it is not everywhere that one can turn a corner and suddenly confront a house literally covered as to its front walls with ivy-leaved Pelargoniums smothered with bunches of brilliant rosy bloom and soaring upwards 20 to 30 feet from the ground, while every here and there in the gardens we get a peep into there are Palms (Chamærops), Agaves, Cordylines, and many other plants demonstrating that the climate differs materially from that of the eastern coasts and inland generally. Of these, however, more anon, for the glimpses here were but a meagre foretaste of the glorious vegetation we witnessed in more favoured localities. Thus one of our first visits was to TREGOTHNAN, the seat of Lord Falmouth, a few miles up the Fal river, whence the palatial mansion is seen crowning an eminence on the right bank as we ascend. Access to the estate is obtained from the steamer by a boat, in which Mr. Andrews, the head gardener, was awaiting us. From the sea the whole estate, save the long avenue-like clearing in front of the house, appears to consist of dense rounded masses of low-growing Oaks, which cover the sea faces of all the hills hereabouts and mask, as we subsequently found, an infinite wealth of Fern life. Land-

[Photo by G. Nicholson.

FIG 64 TREGOTHNAN

ing, we climbed a pretty steep slope forming a carriage road, bounded on one side by a high bank teeming with Hartstongues, Shield Ferns, and several other species, while under the trees and among the shrubs huge specimens of these, together with Lady Ferns and Male Ferns, formed a veritable jungle, to which later on some splendid Dicksonias added an Antipodean touch. It is, indeed, in this particular direction of intermixture of our native plants, shrubs, and trees with semi-tropical ones in the open air that we find one of the main features of interest in Cornwall, and it is doubtless due to the cultural facilities thus afforded that we find so many splendid gardens dotted about the country, in most of which the vegetation reminds one forcibly of that of Mediterranean resorts. Naturally, under such conditions a visit to a number of such, each with its particularly grand specimens of exotic growths, render it somewhat invidious to specify this or that specimen as eclipsing all others. Hence, while recognising the kindness of Mr. Howard Fox, Rosehill, whose gardener, Mr. Jenkins, accompanied us round his charming garden, where the birds are so tame as to take crumbs from the hands of his visitors, of Mr. Andrews, of Tregothnan; Mr. Smith, of Penjerrick; Mr. Rundle, of Basahan; and Mr. Gill, of Tremough, we are compelled, with a few exceptions, to lump together the chief examples of sub-tropical growths which we noted. One special exception was Datura suaveolens in Mr. H. Fox's garden, a magnificent specimen 60 feet in circumference, and, like a smaller companion, crowded with hundreds of the long trumpet-shaped and warmly tinted flowers of this species. A giant Cordyline here, with a massive trunk 2 feet in diameter, is probably the finest specimen in the country. Among the exotic Ferns here Lomaria magellanica, Dicksonia antarctica, Woodwardia radicans, and Cyrtomium falcatum were in grand form, and were, of course, accompanied by innumerable native species. It was, however, at Basahan, on the Helston river, the estate of Sir A. P. Vivian, C.B., that we saw the nearest approach to a New Zealand Fern prospect, since here, in one secluded valley, scores of fine examples of Dicksonia antartica form a dense roofing of fronds by their intermingled plumes, while the soil is even more densely covered with huge Hartstongues and other native Ferns intermingled with dwarf Palms, which have been liberally planted, and promise some day to create a monopoly at the expense of their neighbours. Secluded pools or lakelets surrounded by elsewhere tender exotic trees and shrubs and fringed with luxuriant masses of the white Calla Ethiopica imparted quite a tropical appearance to the prospect, and one would hardly have been surprised to see the snout of an alligator poke out as a specimen of appropriate fauna, though nothing worse than the native frog appeared to shock us. Osmunda regalis was, of course, entirely at home, and in a ferny jungle in this district a magnificent revolved and crispate variety of Lastrea filix mas fell to Mr. Nicholson's lot as a striking example of the surprise kind which now and then rewards the British Fern-hunter; a waist-high specimen and utterly different from any of its neighbours of the same species. Curiously enough, a hunt through thousands of robust Hartstongues failed to yield anything better than half-and-half attempts at a marginate form not worth having, although under such congenial environments a thoroughbred frilled form (S. v. crispum) would suggest itself as a most appropriate response. Our finds hitherto had been several prettily crested forms of this species (not the merely forked or "lobatum" type, which is common, but thoroughbreds), all found in a very small state on old walls or chinks, where luxuriant growth was impossible. Thus one was "spotted" by Mr Nicholson high up under a railway arch, just within reach of a stick, another by myself in a dry hedge, and a third in a stone wall by the roadside, a slender-fronded polydactylous form. This led my companion to propound the theory that variation might be due to restricted growth; a theory, however, subsequently withdrawn when the big Lastrea aforesaid turned up, and certainly not accepted by the writer in view of his experience and knowledge of robust varietal finds elsewhere. In a churchyard at Penryn, a marked submarginate, or, rather, sublineate variety of Hartstongue was found, and within a few yards from it a very narrow fronded form, both these being within less than a hundred yards of the slender polydactylous variety above cited, which was found outside the boundary wall of the churchyard in question. Polypodium vulgare, contrary to expectations, was extremely constant to the normal type; no examples of bi-pirmation cropping up, such as are so frequently noted in Wales and Ireland. An old wall in one of the Penryn lanes had, however, two widely separated colonies of an erratic variety, in which nearly every frond was either ramose or bifid or with

serrate pinnæ at the base, or eccentric in some way. Under culture this has retained its eccentricity. The two colonies were some 30 or 40 yards apart, and consisted of a large number of independent plants, a fair proof that the spores reproduced the erratic type. A promising lineate form of Asp. ad. nigrum was found in a hedge, but requires proving. Altogether the 9 days yielded 14 varieties worthy of trial, and the bulk of these have proved themselves true by subsequent growth. L. æmula was rare, and the first find, an unexpected one and very robust, among a lot of L. dilatatas, was actually carefully lifted as a crispate foliose variety of the latter species before the recurved pinnules undeceived us, and the finding of another clump in the vicinity removed all doubt, when the "find" was replanted with a pang of disappointment. Among the most striking plants observed growing in the open in the several gardens we visited were Woodwardia radicans, Lomaria magellanica, Dicksonia antartica, all in best possible form, Solanum crispum, S. Wendlandii, Datura suaveolens, Abutilon vitifolium, Citrons bearing large fruits, Olearia argyrophylla, O. macrodonta (10 feet through and a mass of white flowers), Pittosporum Tobira, Cordyline australis, flowering freely, Fragaria indica with yellow flowers, Viburnum rugosum, Semell (Ruscus) androgyna growing most luxuriantly, clambering over adjacent trees and shrubs, and bearing fringes of yellow flowers on its leaflike bracts. Sempervivum holochrysum, with grand bunches of yellow flowers, Solanum aviculare, rich purple blue flowers, Azalea indica myoporum lactum, with profuse pellucid dots on the foliage, Desfontainia spinosa, Lapagerias rosa and alba, Rhodochiton volubile, with purple red calyces, Arundo donax, Leptospermum scoparium, with thousands of white flowers, Grevillea rosmarinifolia, red-flowered 16 by 6 feet, very fine; Arundinaria fastuosa, with canes 1¼ inch in diameter, Chanthus puniceus in splendid form, Teucrium fruticans, avenues of Camellias, and innumerable other exotics, which elsewhere in these islands require glass culture and winter warmth, while here they are as robust and rampant as in Madeira or similar warm habitats. *Chas. T. Druery, V.M.H., F.L.S.*

LILIUM NEILGHERRENSE: THE NILGIRI LILY.

This rare and stately species, with blossoms 11 inches in diameter, can be had in flower from July until November; but, unfortunately, it is not easy of culture, and is therefore seldom successfully grown. I send a photograph of flowers produced on bulbs raised in England from small offsets, the original bulbs having been sent me direct from the Nilgiris ten years since. This bulb, like most of those imported from the East, had been deprived of its lower roots—a proceeding that entails severe loss to the plant, which, in consequence, makes little growth during its first season after the operation. One meagre flower, almost without foliage, was produced the first year; but it was cut off before it had faded, and the bulb was placed close to the glass of a warm vinery and encouraged, by careful watering, to mature itself. A slight top-dressing of rich soil was added to the surface, and it was many weeks ripening its stem and bulb before it went to rest. For a short time it was kept almost dry, in a minimum temperature of 45°, until signs of growth began (in April), when more rich top-dressing was added, and a strong stem, with ample foliage and one large bloom, was produced, with several small offsets surrounding the original bulb.

During the next spring the bulb was repotted low down in a 9-inch pot that was provided with good drainage, the compost consisting of peat, loam, and leaf-mould in equal proportions, charcoal in small lumps, sand, and bone-dust being added in moderate quantities. The offsets were removed at the same time and grown on in the same manner as the large bulb, until they had attained their flowering size, when each produced two blooms on a stout stem, of far greater vigour than those from the original bulbs.

The bulbs are not repotted every year, and they usually succeed best when left for two years in the same pot, their wants being supplied by fresh top-dressings.

In this way it is not difficult to work up a stock of this magnificent Lily at home, although the supply of bulbs from India is very limited. The usual mistakes in growing it are two-fold. It is the common practice to "dry off" the bulbs of Liliums directly after flowering, but every leaf on the stem should be kept green until they show signs of having completed their work. A large quantity of water is not, however, required by the maturing bulb, and it is therefore necessary to supply its wants with judgment. All the sunshine possible, with sufficient fire-warmth in winter, should also be supplied during the long period of ripening.

The other usual error is to repot the bulb yearly. All Liliums resent disturbance at their roots, and especially injury to the thick, fleshy roots below the bulb. They should, therefore, be given sufficient room (in repotting them) to allow of several renewed top-dressings, with plenty of tepid water and liquid manure during their time of growth. *J. L. R.*

[A fine illustration of this Lily was given in our columns on July 20, 1901.]

LIME IN SOILS.

It has long been recognised that the lime in soils is subject to regular loss. This is owing to the carbonic acid which is present in rainwater, and also that which is constantly being formed in the soil itself acting as a solvent to any lime which may be there, and so removing it into the drains or to the general stock of underground water and out of the reach of roots of most garden crops. Ordinary garden soils which contain upwards of one per cent. of lime and but little organic matter are subject to a normal loss of carbonate of lime in the drainage water amounting to about 800 pounds per acre every year. Most of the carbonate of lime present in soils has been derived either from the natural chalk formation of the district, or from artificial applications of chalk to the land, or dressings of quicklime and marl.

The loss of this carbonate of lime in soils is increased by the use of manures containing sulphate of ammonia, low grade acid superphosphates or coal ashes, but is diminished by the use of nitrate of soda, basic slag, farmyard and stable manure, and vegetable débris.

The Rothamsted agricultural experiments show that manuring the land with organic manures, such as stable manure, rape cake, shoddy, dried blood, skin and bone manures, &c., and the growth of Peas, Beans, Clovers, and other leguminous crops which leave behind in the soil a considerable residue of roots rich in oxalate of lime, or the débris of plant-root tissues which accumulates in the soil of grass-land, or of fields laid down to temporary pasture, all go to maintain the stock of carbonate of lime, which in its turn is being as constantly drawn upon for nitrification purposes by the micro-organisms in the soil, and for the neutralisation of the acids produced during the bacterial decay of the organic matters which the soil receives in manures.

Further, the normal growth of crops tends to restore a certain amount of carbonate of lime and of carbonate of potash to the soil, because the plant in feeding upon the various salts dissolved in the soil by the rainwater, melted snow, and minor deposits, takes more of the acids than of the lime or potash, leaving behind a basic residue of lime or of potash, combined with carbonic acid excreted from the roots of the growing plants. Experimental research has shown that with ordinary garden crops the restoration of lime and of potash base in the before-mentioned fashion must be considerable, probably supplying sufficient base for the nitrification processes which are always going on in the soil beneath our feet. The soil is not a dead, inert mass, but a laboratory of living germs which are always working for the benefit of man, or for the development of the higher descriptions of plant-life.

These facts go to explain why many soils containing little or no carbonate of lime yet remain healthy under ordinary garden cultivation, provided that acid manures or coal ashes are not used on them.

In old garden soils and market gardens, to which large quantities of farmyard or stable manure or peat-moss litter are constantly applied, there is a danger of these becoming sour, provided but little natural lime exists in them. In this case an application of crushed chalk, 2 000 lbs. per acre, or of ground quicklime, 1,000 lbs. per acre, or of basic slag, 500 lbs. per acre, or a liberal dressing of old mortar rubbish, is to be recommended. Any one of these may be applied in the winter or early spring, and dug or ploughed in, so as to get them well incorporated with the soil. One application of these materials given once in five years would, in most cases, be sufficient. For fruit trees and for Vines 8 ozs. of bone-meal may be given once in each two years to each square yard of land immediately under and around the stems according as the surface roots may have extended.

In garden soils which are subject to the club-foot disease, or to the "finger and toe" fungus, it is a sure indication that the soil is in want of lime, and an immediate application should not be neglected. It is also necessary that the diseased plants be taken up and burned; do not put them upon a manure heap, or into a pig-sty, because the disease would be again returned to the soil, and in a more virulent form. *J. J. Willis, Harpenden.*

NURSERY NOTES.

MESSRS. A. CAMACHO & CO.'S ORCHID NURSERY, BRIGHTON.

A few years ago Messrs. Camacho commenced to import Odontoglossum crispum in very large quantities, selling the importations at Messrs. Protheroe & Morris' Auction Rooms, Cheapside. The success of the early importations, and the beauty of some of the spotted varieties which flowered out of them, induced the firm to start their compact block of 11 long span-roofed houses in De Montford Road, Brighton, in order to test at least a fair proportion of their importations and some of the collections from new districts, Mr. Bogaerde, well known both in England and on the continent as a clever Orchid expert, undertaking the management. Consequently the establishment can now boast over 60,000 unflowered plants of Odontoglossum crispum, of which some 12,000 are freshly imported and the remainder are in various stages of establishment approaching the flowering condition. The houses are not arranged for show purposes, and the plants until proved are kept in small pots, closely placed on the staging to economise space. As the spotted forms flower they are potted on and placed on inverted flower-pots, and in that way quite a valuable collection is arranged in one of the houses.

At present but few are in bloom, but four very nicely blotched varieties were among them, one

small and weak plant having a very finely-formed white flower densely blotched all over with light red-brown, a tint which Mr. Bogaerde expects will deepen when the plant produces fully developed flowers. The batches are kept together as imported, and it is curious to see how some peculiarities may be traced in each batch by which they can be distinguished from others collected in localities so near together that no difference could have been expected. One batch of 4,000 plants with red-brown bulbs is being carefully watched, as the few of them which have already flowered have been spotted varieties, and another in bud is heavily blotched and very promising. One batch has not yet produced any with spotted sepals and petals, but an unusual proportion of varieties with large and finely spotted lips, the three now in flower well showing that peculiarity. The plants of another set are prolific in good forms of O. Adrianæ and, as usual in that case, O Hunnewellianum is also present with the O. crispum. Some good O. loochristiense have also appeared with a very close affinity to O crispum, but with yellow-ground colour blotched with brown.

The culture of Odontoglossum crispum may be said to be the main object of the nursery, but there is also a fine batch of a good type of O. Pescatorei and smaller lots of several of the showiest Colombian species.

Two long houses are also filled with established unflowered Cattleyas, the first having a very fine lot of C. Trianæi in sheath, including a large mass imported as a large, pure white variety; and the other an equally good lot of C. Warscewiczii from a new locality, and which are said to come with a recommendation from the collector, and dried flowers, which render it desirable to prove them before selling.

NOTICES OF BOOKS.

MUSHROOMS, AND HOW TO GROW THEM. By John F. Barter (J. F. Barter, Ltd., Napier Road, Wembley, R.S.O., Middlesex).

We advise those of our readers who want to grow Mushrooms for sale or home consumption, and who are hesitating owing to lack of knowledge, to purchase this small octavo volume of 44 pages and consistently to follow the simple instructions therein given by a man who has made a good living by Mushroom culture and the making of the spawn from which the esculent springs, and who has 40 years' experience behind him. He is a firm believer in the open-air treatment of the Mushroom, and gives full directions for making the beds (ridges) and spawning a meadow, as the case may be. His practices in some points differ from our own, but then, before such a master of the craft one must be silent. The spawning of the beds or ridges should not be done till the warmth has sunk to 75° as proved by the plunging thermometer. We used to spawn beds at 98° and a degree or two less. The remarks on the casing soil are very much to the purpose, many a failure in Mushroom growing being traceable to the use of unsuitable soil. Another thing to avoid is impatience, the Mushroom being an erratic esculent. "Sometimes," says Mr. Barter, "a crop will come in a month or in six weeks. On the other hand, we have known beds made in November to delay bearing until the following April, and then to produce splendid crops." There are pithy little paragraphs on Testing the Heat of Ridges, Gathering, Digging out Stalks, Frequency of Gatherings, Grading, Packing, Marketing, Mushrooms in Sheds, in Vineries, Cellars, and all full of useful remarks by a man of observation. This one will serve. The spawning of a meadow by two men would, in the case of a prosecution for trespass, be taken as evidence of the land being "cultivated."

OSMUNDA PALUSTRIS VAR. MAYII.

THIS very remarkable form originated in a sowing of Osmunda palustris in the nursery of Mr. H. B. May, Edmonton, and was awarded a First Class Certificate by the Floral Committee of the Royal Horticultural Society at the Holland House Show in July last. As will be seen by the illustration, the normal type of the species is replaced by a peculiar "ramo-cristate" form of the pinnæ, while the pinnules are contracted and crispate, the result being a very novel form of cresting or tasseling. A further variation is a broad band of white along the midribs, curiously suggesting what is probably an impossibility, viz.: a cross between Osmunda and some one of Mr. May's variegated forms of Pteris, which in this respect is closely imitated. Although originated, as stated, in a sowing of O. palustris, the plant presents many of the characters of O. regalis, which are emphasised by the subsequent appearance of the peculiar terminal fructification common to both species, but in this case more on the lines of O. regalis than of O. palustris, while the folia- [illegible] more to the former than to the latter [illegible]. It O. regalis, it may be a secondary [illegible] well known O. r. cristata, but this is an open question. In any case it is a very [illegible] Fern, and considering the constant [illegible] either species, a distinct acquisition as a hardy Fern of easy culture. *C. T. D., V.M.H., F.L.S.*

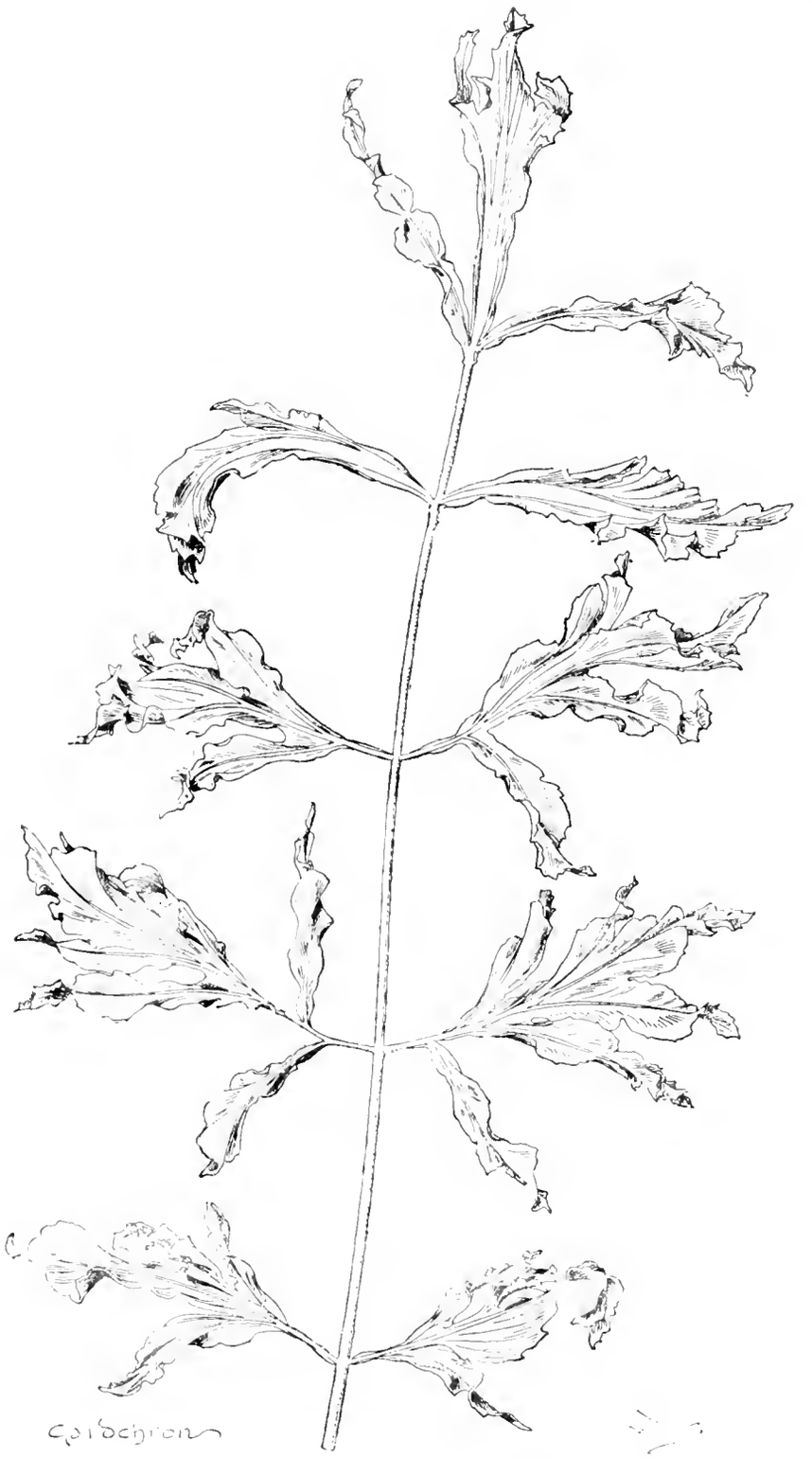

FIG. 65.—OSMUNDA PALUSTRIS VAR. MAYII.

THE ROSARY.

AUTUMN CULTURE OF ROSES.

OCTOBER will be a very busy month in the Rose garden. The planting and preparing of the ground by trenching for planting must then be undertaken. A fairly well drained loamy soil will meet the requirements of most varieties. Some well decayed farmyard manure and half-inch bones should be incorporated with the soil as the trenching proceeds, but these instructions will avail little unless we have, prior to planting, a heavy and continuous downpour of rain, for, in the south, the long drought has been much more serious than has been the case for some years. I am an advocate of early planting providing the soil is in anything like a suitable condition. The trenching should be done some weeks in advance of planting so that the ground may become settled. Briar and other stocks intended for budding can be planted early this year on account of the forward ripening of the wood. Seedling Briars and Briar cuttings succeed best on heavy land, the Manetti and the multiflora stocks on lighter soils. These can be planted any time after the second week in October, as circumstances permit. Standard Briars can be planted last of all, or even during November, but I will refer to these later.

A goodly portion of the pot Roses that have been plunged outside during the summer may be placed in October in a cold house or frame, in which plenty of ventilation is allowed both during the day and the night time, providing the weather be genial. These plants will furnish an abundance of bloom for some time to come, and the remaining plants if brought in later will provide a succession of bloom. A light spraying with the syringe on bright days when the trees are first brought in will help the buds to open, cleanse the growths and keep the foliage fresh. If the plants have rooted through the pots they should be placed on or be plunged a few inches deep in a bed of soil, but on no account should the roots be mutilated till the flowering season is over. On or about the 15th of the month is a suitable time at which to lift plants from the ground for potting for later forcing. They should be carefully taken up with all their fibrous roots intact, and be allowed to carry three or more well ripened shoots. Directions for potting and preparing of soil were given in a former paper. Hybrid Tea varieties will be found to succeed and flower well in pots with less forcing than varieties of the Hybrid Perpetual type. There are two varieties that I should like to mention. They are old kinds but they are still of the best quality, viz.: G. Nabonnand and Souvenir de Catherine Guillot. They have both handsome foliage and are profuse bloomers and their flowers open well, which is a very desirable quality, as some varieties fail to do this. When the potting is completed, they can be plunged for a month outside in a bed of ashes before being brought into the glass-house, for until they are established they must be kept cool, and forcing must be deferred until the plants have plenty of active roots. An important operation in October is the insertion of cuttings. Well ripened shoots should be taken for the purpose with or without a "heel," and the cuttings, from 6 to 8 inches in length, be planted in lines on a north aspect 6 to 9 inches apart. The soil should be prepared previous to planting, and some good gritty sand and burnt earth should be well incorporated with it. A portion of these materials can be put in with the cuttings when the trenches are made, for it will help the cuttings to form a callus. Tread the soil about the cuttings firmly, and leave two or three buds above the surface of the ground level. After all is finished, apply a thin mulch of cocoanut-fibre. *J. D. G.*

PLANT NOTE.

ASCLEPIAS DOUGLASI.

THIS perennial, a native of Western America, is little known in gardens, but is worthy of culture for its foliage alone. The entire leaves in strong specimens are a foot in length and 4½ inches in width, and the plant, exceeding 6 feet in height, has a noble appearance when it has attained its fullest dimensions. It flowers in August, producing numerous rounded heads of small blossoms, some of the flower-clusters having a circumference of 11 inches. When all the blooms are fully expanded these "flower balls" appear flesh-pink in colour. The corollas, which are less than half an inch across, are yellowish in tint and the reflexed petals of a dull reddish hue. The blossoms are perfumed, and the flower-heads attract innumerable Humble bees, which soon become stupefied by the nectar. Between 150 and 200 blooms are contained in a single flower-head. *S. W. F.*

The Week's Work.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Black Hamburghs.—If the vines that were forced early have made weak growths, it is a sign that they need attention at their roots. No better time than the present can be selected for overhauling the borders should they require it. Have some new compost prepared ready for applying as the work proceeds, but before commencing see that the old border is in a thoroughly moist condition and cover the glass-roof with mats, so that the foliage may be kept syringed without fear of burning. Commence by forking out the old sour soil, but do not damage or bruise any of the roots during the process. When sufficient of the old compost has been removed, make up the border again with the new soil, spreading all the roots evenly near to the surface before they are covered. Half-decayed leaf soil and grit should be placed about the roots, for these substances encourage the formation of new fibrous roots. Use the coarser material on the top and when finished make the border quite firm. Retain the shading on the roof for some time longer, and always keep the foliage moist. New roots will soon begin to spread in the compost, and by autumn the vines will have recovered from their disturbance, but they must not be started into growth early.

Young Vines of this season's planting should be watered carefully and they should also be kept free from red-spider and thrips. They will derive much benefit from a little artificial heat, at the same time ample ventilation should be given them. Gradually reduce their lateral growths each week.

Grape Gros Guillaume.—This variety does exceedingly well when grown in the same house as Muscats, and, with proper treatment and careful attention during its growing period, very large bunches of fruit may be had. This variety has a reputation for shyness in bearing, but this can be largely overcome by occasionally cutting out the old rods and training young ones in their places. It seems to succeed better when inarched on Buckland Sweetwater or Muscat of Alexandria, than when it is growing on its own roots. The fruit has quite a noble appearance on the dinner table, and it is well worthy a place in any vinery. In most cases the fruit will now be ripening, but with care it can be had in good condition until November. Liberal supplies of food are necessary in order that the bunches and the berries may become properly finished. The rods should be trained fully 4 feet apart to allow plenty of space for the strong growing foliage.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Naturalising Bulbs.—Where wild gardening is practised the present is an appropriate time for arranging for displays in the spring months. In the old Orchard that is retained because of its picturesque appearance, whose trees are preserved because of their green, lichen-covered trunks and bright ornamental fruits rather than for their economic value, many desirable effects may be had from bulbs. Natural, informal stretches of Snowdrops, Crocuses, Narcissi, and Tulips to succeed one another in flower, with here and there groups of blue Apennine Anemones, Chionodoxa Fritillarias, and Scilla sibirica, if tastefully arranged will create charming effects. To obtain the best results the bulbs must be used liberally for planting thickly in broad, rich masses of one kind. In grouping, the aim should be to avoid hard lines of demarcation between the colours and groups, and at the outskirts to let them disappear quietly and not abruptly into the space around. In undulating grass the ridges should be left unplanted and only the hollows filled in. To achieve a natural form of grouping one must, after having determined on the size and shape of the groups, throw the bulbs in large handfuls in the direction the effect is desired, and then let men follow with trowels or crowbars to plant them exactly where they have fallen. By doing this stiffness and formality will be avoided. Where the bulbs are to be grown, the grass should be mown quite closely previously to planting, in order to facilitate the operation, and again at the close of the growing season of the grass, so that in the spring the flowers can be seen to the best advantage. After the bulbs have flowered the grass must not be mown until the foliage has ripened, otherwise the vitality of the plants will be impaired and they will not flower well the following year. The bulbs should be put down as deeply as it is possible to put them, for no matter how deep they are planted the flowers will appear above ground at the proper time, and by being deeply planted they will be the safer from the attacks of mice. In naturalising Snowdrops, they should be grouped in the grass near to the pathways, while the white and yellow Crocuses are better seen at a distance in distinct clumps of colour. The purple coloured Crocus is the least effective in grass, and should only be grown in spots open to the full sunlight. Of Narcissi suitable for naturalising the kinds are numerous, but the following are amongst the best —*Large Trumpets:* Emperor, Empress, Golden Spur, Henry Irving, Horsfieldii and Obvallaris. *Medium Crowned:* Barri conspicuus, Leedsii, Sir Watkin and Stella Superba. *Small Crowned:* Burbidgei, Poeticus and Duchess of Westminster. Duchess of Westminster is rather expensive, but it affords a lovely effect in grass. Queen of Spain is a charming Daffodil that should have a favoured spot given it, close to a walk through the grass, as it is a delightful flower and really does better naturalised than cultured in a border. Tulips, unlike the Daffodils and other bulbs mentioned, unfortunately do not increase when naturalised, but require to be replanted every three years. Cramoisie Brilliante and Dusart are two varieties well adapted for the grass as their colours show up well at a distance, and they are of such sturdy habit that they hold their flowers erect in their surroundings.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Autumn trenching.—At this season of the year, when many crops are being cleared from the land and it is too late to plant others, the opportunity should, whenever possible, be taken to trench the ground, with a view to securing an early crop next spring. The surface of the soil is generally trodden hard in the gathering of such crops as Peas, Beans, Onions, &c., but it is not advisable that it should remain in a solid condition all through the autumn and winter. The disintegration of the soil by the agency of atmospheric gases and of water is retarded when the soil is in a solid condition. Therefore it is advisable to trench early and manure the ground in a suitable form for the crop that is intended to be planted in spring time. Now is the best time at which to prepare for next year's Onion crop, and by early manuring the material has time to become well rooted and incorporated with the soil, so that it is in the best condition when the young roots are ready to absorb it. Soils of a light texture may, in trenching, have the second and the bottom spits brought to the surface, but if the subsoil is very heavy and clayey, thoroughly break up the bottom of the trench and add plenty of material that will lighten its texture, such as road-sweepings, wood ashes, &c., and allow it to remain until the next time of trenching before being brought to the surface. Ridging heavy soils is strongly to be recommended in order that the influences of frost and air may pulverise it and bring it into a better working condition. The value of deep culture of the soil has been especially evident during the past season. I may instance a crop of Peas that were sown on a

well-trenched quarter of land and close by were several rows that were sown on land that had not been trenched for some years. The difference in height of the haulm of the same varieties on the two pieces of ground was nearly 2 feet, and the amount of Peas gathered from the trenched ground was nearly double that of the other, besides lasting much longer in bearing. This demonstrates that it is far better and more profitable to cultivate a limited space really well than a large area indifferently.

Turnips.—The recent rains have caused the seeds of autumn-sown Turnips to germinate well. Before the seedlings become too large they should be thinned to about 9 inches apart in the rows. It is a mistake to delay thinning, as leggy seedlings never form satisfactory roots. Afford the plants plenty of water in dry weather, otherwise there will not be time to mature the crop before the hard weather arrives. Early crops that have reached their full size should be pulled up and the roots be laid in a shady border in moist soil, so that they may retain their best qualities.

Beet.—Many roots of this vegetable have now reached their full size, and if they are left longer in the ground loss of colour and quality will result. It will be quite safe to go over the crop and pull all that are in condition and "heel" them in a shady spot with their rootlets and leaves intact, until the general crop is ready for storing, when they can all be stored together. I have never known this early-lifting to injure the quality of the roots when the work has been done, as it should be, in a careful manner.

Winter Vegetables.—Keep the ground about these crops clear of weeds, and well stir the soil between the rows to encourage the best possible growth. Any blank spaces may still be filled, but the plants must be transplanted with good "balls," for this is essential at this late date.

THE HARDY FRUIT GARDEN.

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

Peaches and Nectarines.—These fruits should be gathered as soon as they will part readily from the tree, for if they are allowed to remain until they are over-ripe they will not keep in good condition long. It is also a mistake to allow the fruits to tumble off into nets, for they are worthless the second day after falling owing to bruises and marks. That excellent variety Grosse Mignonne is generally at its best after the first week of September, and is followed by Bellegarde in order of ripening. Princess of Wales and Sea Eagle should receive copious supplies of liquid and heavy syringings to enable them to finish up their fruits. The leaves should be drawn away from the fruits to allow the sun's rays to reach them. If red spider has been kept under it will not be troublesome after this date. All trees from which the fruits have been gathered should receive attention in the matters of watering and syringing in order to keep them in good condition. Trees that have been condemned should be rooted up, and the ground be prepared for the reception of other trees. Early varieties that have almost ripened their wood can be transplanted now if desired, especially if the trees have been prepared for shifting by trenching around their roots. When lifting it is necessary to unfasten the branches so that the tree can be lifted entirely. After transplanting it will be necessary, should bright sunshine prevail, to hang a mat or some other shading material in front of the tree for about a week or ten days in order to prevent the leaves from flagging. The foliage should be syringed twice daily.

Pears now ripening should be watched, or they will soon be over-ripe and useless. Early varieties should be gathered as soon as they will part readily from the tree. Williams' Bon Chretien is always of better flavour when the fruits are gathered before becoming dead ripe. Clapps' Favourite is a Pear of good appearance and of very fair quality. This variety should be sent to table soon after gathering. Jargonelle is best ripened a few at a time, for this delicious Pear will not keep in good condition long. The best examples of this Pear are those grown on walls, and preferably upon fan-trained trees. Marguerite Marillat is a handsome fruit, and requires good cultivation to bring it to perfection. It is large, juicy, and sweet, and one of the best of its season. All cordon-trained trees would derive benefit from good soakings of water and applications of liquid manure. Keep the laterals away from the fruits of later varieties to allow the sunshine to reach the latter and promote flavour and colour.

Apples.—These fruits should be gathered and stored as soon as they are ready. Wasps are attacking the early fruits to a great extent. Apples, I fear, will be small this season on account of the large crops and the dry weather. Beauty of Bath, Irish Peach, Quarrenden, Lady Sudeley, and Red Astrachan are all ripening.

Culinary Apples.—The trees should receive water if they are suffering from drought, or the fruits will be of inferior quality. Early varieties such as Lord Grosvenor, Lord Suffield, Frogmore, and Domino should be gathered and used as soon as ready. Gather them carefully and store in the fruit room, which should be kept cool and well ventilated.

Strawberries.—The fruits of Alpine varieties must be protected from birds and wasps, and this is best accomplished by means of wasp-proof netting or gauze. Water young plants thoroughly in order to keep them growing and to protect them from attacks of red spider.

Strawberry plants for forcing should be potted by this date, and placed in full sunshine on a hard bottom—preferably ashes—and stood in batches conveniently arranged for watering. These will be improved by occasional syringings on bright afternoons. Keep the soil free from weeds and the plants free from runners.

Figs.—If wasps are at all troublesome, place the fruits in small muslin bags. On south walls it will be necessary to give the trees a good soaking of water.

THE ORCHID HOUSES.

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

Masdevallias.—The month of September is a suitable time at which to re-pot or replace the surface material of the receptacles in which these plants are growing, but if more convenient these operations may be delayed until February. I usually attend to these matters at the present time, because during the next two months the plants make the greater number of their new roots, and, further, the cool, moist air during the autumn is favourable to their recovery after disturbance. Strong healthy specimens may need additional rooting space, but if they are intended for exhibition next spring they should not be unnecessarily disturbed now, for they might then fail to bloom satisfactorily when required. If a plant has overgrown its receptacle, the pot or pan should be carefully broken, and the plant be placed into another of suitable size without the least disturbance of the roots. Extra large plants which have lost their centre leaves may be divided and made up anew, or they may be made up into several neat, compact specimens. A few days previous to re-potting it is advisable to allow the plants to become moderately dry, for the drier the roots are the less liable are they to receive injury. All Masdevallias of the M. coccinea or Harryana section, M. Veitchiana, M. Lindeni, M. ignea, M. macrura, M. peristeria, M. coriacea, M. ephippium, M. Gargantua, M. elephanticeps, &c., are of robust growth, and are vigorous rooting plants; consequently they require plenty of space in which their roots may ramify. Dwarf, compact-growing varieties as M. Estradæ, M. caudata Shuttleworthii, M. Wageneriana, M. ionocharis, M. hieroglyphica, M. picturata, M. O'Brieniana, M. tridactylites, M. muscosa, M. xipheres, &c., succeed best in as small a receptacle as they can conveniently be placed. The same remarks are applicable respectively to hybrids which have been raised from either section. Masdevallias require plenty of drainage in their pots, and should have them filled two-thirds with crocks or well-dried pieces of Fern rhizome, and over this should be placed a thin layer of rough sphagnum-moss. When re-potting keep the base of the leaves on a level with the rim of the pot, and for a compost use fibrous peat and sphagnum-moss in equal proportions, mixing with it a suitable quantity of broken crocks and some coarse silversand. Make the compost moderately firm about the roots, especially around the centres of the plants, but do not ram the potting medium to such an extent that water cannot pass freely away, or the soil will soon become sour. Water should, for several weeks, be afforded very carefully, for excess of moisture during that time would cause the loss of many leaves and roots. When new roots are seen pushing through the soil, the supply of water should be gradually increased. A slight spraying overhead on bright days will help the plants considerably, but it must not be afforded in sufficient quantity that it runs down the leaves into the compost. When no separate house is available for these plants, a suitable position can easily be found them among the cool Odontoglossums.

Heating System.—Everything connected with the heating apparatus should be overhauled annually, and the present is a suitable time to do this overhauling. Ascertain if everything is in good working order, so that during the coming winter the proper temperatures may be maintained without difficulty. When cleaning out the boilers, hot water pipes, &c., it is advisable to make use of all the sun-heat to maintain the necessary temperatures in the warmer divisions. While the work is being undertaken use less water when damping the houses, and afford smaller quantities of water to the roots, it being safer to keep them somewhat dry than too wet. The work will not affect the plants in the cooler divisions if it be done at once.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Violets.—These should now be lifted from the open ground and be transplanted into pits or frames. The border should, if at all dry, receive a soaking of water the day before they are taken up, so that much soil may adhere to the roots. In planting, pack them close together, in order to get as many plants in the frame as is possible. Place them within about 6 inches of the glass, for the more light they receive the better will be the colour and substance of the flowers. Immediately after planting they should receive a good watering in order to settle the soil about their roots, after which the lights should be placed on the frames and the plants be kept shaded until they have recovered from the effects of moving. When established, and providing the weather continues warm, the lights may be left off the frame both during the day and night time, and this condition may be maintained until frost makes its appearance. A syringing at intervals of a few weeks with clear soot water will be a safeguard against an attack of red spider.

Housing Plants.—Preparations should be made for the housing of hard-wooded plants, that undue exposure to heavy rains which will cause an excess of water at the roots may be avoided. Ericas and Azaleas are amongst the first subjects to suffer from a superabundance of water at their roots, and especially does this apply to plants newly potted. After returning the plants indoors do not fail to give an abundance of ventilation both during the night and the day, for this will mature the wood and harden up the flower buds which, in Azaleas, are now becoming plump. Should the weather continue warm throughout the present month afford a gentle syringing overhead once a day, as this will be equivalent to the night dews which the plants have been subjected to outside. Keep a sharp look out for the small white scale insect on Acacias. These pests can be eradicated by spraying the plants with XL insecticide. Previous to bringing the plants indoors the interior of the houses should be thoroughly syringed with a mixture of soft soap and a wineglassful of insecticide in four gallons of water. This will clear the woodwork and the walls of red spider and other insects which have established themselves in the crevices. The dry, arid conditions in the plant houses during hot weather favours the increase of these pests which, if left undisturbed, will prove very troublesome in the early months of the new year. The drainage in the pots of all plants that have been standing outside should be examined, and if found defective be at once made perfect.

Bulbs for forcing.—The first batches of these should now be planted. If very early flowers are desired it is much better to plant the bulbs early than to subject them to hard forcing, which, in many cases, causes the flowers to go "blind." Flowers from plants that have not been forced too quickly will have more substance, and will also last much longer when cut. If grown specially for producing flowers for cutting, the best receptacles are boxes about 6 inches deep, but if they are needed as plants for decorative purposes pots are better for the purpose.

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

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APPOINTMENTS FOR SEPTEMBER.

SATURDAY,	Sept. 1	Soc. Franc d'Hort. de Londres meet. / German Gard Society meets.
TUESDAY,	Sept. 4	Nat. Amateur Gard. Assoc. meet.
WEDNESDAY,	Sept. 5	Glasgow and West of Scotland Hort. Soc. Show. / Westcott Dahlia Show.
THURSDAY,	Sept. 6	Nat. Dahlia Soc. Exh. at Crystal Palace.
FRIDAY,	Sept. 7	Manchester and N. of Eng. Orchid Soc. Exhib. in Manchester Botanic Gardens.
SATURDAY,	Sept. 8	Dutch Gardeners' Soc. meet at Richmond.
MONDAY,	Sept. 10	United Hort. Ben. & Prov. Soc. Com. meets.
TUESDAY,	Sept. 11	Roy. Hort. Soc. Comms. meet.
WEDNESDAY,	Sept. 12	Roy. Caledonian Hort. Soc. Show in Waverley Market, Edinburgh (2 days). / Meeting of British Gardeners' Association at Edinburgh.
THURSDAY,	Sept. 13	York Dahlia show (2 days).
SATURDAY,	Sept. 15	German Gard. Soc. meets.
MONDAY,	Sept. 17	Nat. Chrys. Soc. Com. meets at Essex Hall, Strand (3 p.m.).
TUESDAY,	Sept. 18	London Dahlia Union Exhib., Regent's Park (2 days).
WEDNESDAY,	Sept. 19	Nat. Rose Soc. Autumn Exhib. at Roy. Hort. Hall, Westminster.
THURSDAY,	Sept. 20	Evening Nat. Chrys. Exhib. at Hort. Hall, Westminster.
TUESDAY,	Sept. 25	Roy. Hort. Soc. Comms. meet.
SATURDAY,	Sept. 29	Michaelmas Quarter Day. / Dutch Gardeners' Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty three Years at Chiswick: 60·6°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, August* 29 (6 P.M.): Max. 75°, Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, August* 30 (10 A.M.): Bar., 30·3, Temp., 68°, Weather—Fine.

PROVINCES.—*Wednesday, August* 29 (6 P.M.): Max. 71° Bury St. Edmunds, Min. 61° Scotland north-east.

SALES.

MONDAY AND WEDNESDAY—Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, — Dutch Bulbs in large variety at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

Two Leaders in Science.

It is with no ordinary feeling of regret that we have to announce the death on the 20th ult. at Torquay, of Dr. Marshall Ward, in his 52nd year. Since 1895 he had acted as Professor of Botany in the University of Cambridge, having previously acted in that capacity at Coopers' Hill. This is no place wherein to do more than allude to his original researches, as brilliant as they were solid, into the history and nature of bacterial and other fungal diseases—researches which won for him the "Royal Medal" from the Royal Society. We are more concerned here with his labours in applied science. Marshall Ward was indeed pre-eminent among modern botanists, who have known how to turn to practical account the researches of modern science. His services to the Coffee planters of Ceylon, in the matter of the Hemileia are well-known to those interested in tropical cultures. To home cultivators he is known by his numerous treatises on disease in plants generally, and in timber trees in particular, and among his latest publications are those on Grasses and on Trees, the latter intended to supply students of forest-botany with a guide to the study of trees and shrubs from the point of view of the out-door naturalist, at the same time to interest them in methods of laboratory work, and in those biological researches too much neglected in former days, but which now, by the sway of the pendulum in the opposite direction, interfere too greatly with the study of plants in the field, and with those details of structure and classification which are so essential to medical students, to cultivators, and to all who have to apply a knowledge of botany to every-day use. Marshall Ward, however, seemed always to have in mind the requirements of the practical man. An illustration of this occurs to us as we write. The Professor had been lecturing in the great vinery at Chiswick on the diseases of timber trees. Among his auditory were a number of students from one of our colleges, and, after the Professor's lucid and thorough explanations, the comment was made in our hearing—"How different this is from the 'gardeners' gas' we so frequently experience." The allusion had reference to certain county council lectures given by teachers imperfectly equipped for their task. A further illustration may be found in the Professor's recent inaugural address to the students at Wye College, which is alluded to in another column. Indeed, while no research seemed too recondite or too abstruse for him, no detail which was or might be of practical importance was overlooked by him.

Marshall Ward was a member of the Scientific Committee of the R.H.S., and his contributions to the journal of the society are, if not numerous, at least among the most valuable of the many that have appeared in late years. His loss will be severely felt not only in Cambridge but wherever botanical science is pursued.

The news of the death, on the 25th ult., of CHARLES BARON CLARKE will be read with the greatest concern by his numerous friends and associates. Mr. CLARKE graduated M.A. at Cambridge, and was for many years in the civil service of India. He travelled widely in the north-west districts of that country, where he collected largely. He acted for some years as Director of the Royal Botanic Gardens in Calcutta, and on his return to England established himself at Kew and devoted himself to systematic botany, writing numerous monographs and contributing to various "Floras." He was a Fellow of the Royal Society, and was for some time President of the Linnean Society. Although specially devoting himself to systematic botany, Mr. CLARKE was a singularly well-informed man, versed in classics, mathematics, music, farming, and we know not what besides. His knowledge of the geography and natural history of India was profound. His willingness to assist his fellow-workers was proverbial, and, like many others, we have often had occasion to avail ourselves of his vast and varied stores of learning, and to profit by his critical judgment on points of doubt and difficulty. He was probably little known by the general public, but his merits were keenly appreciated by his fellow-workers, and the void left in the ranks of botanists by his decease will indeed be difficult to fill. Mr. CLARKE, who was unmarried, died in consequence of inflammation set up or accelerated by a long cycle ride.

The Royal Botanic.

The remarks we made in a recent issue on the subject of this Society have elicited the following letter from a very old correspondent of this journal. The statements he makes do not, in essence, differ very widely from those we made, but in any case in deference to one who we know has the interests of the Society at heart we now insert his communication without any further comment of our own:—

"In your remarks on the present condition of the Royal Botanic Society you are a little in error. Certainly the gardens ought not to have been called botanic, as they have never received any encouragement from the Government to pursue scientific botany, have no Government grant, and have only been indebted to the Government for increased rent and the obligation to open the gardens twice a week to the public. It is really since the exclusive policy was abandoned that the Fellows have, to a certain degree, fallen off. Now it is extremely easy on any day to get an order to enter. Monday, Wednesday, and Saturday are public days. During this summer 70,000 people have been admitted at really nominal payment. The gardens were originally formed as a 'rus in urbe'—a garden in the midst of London, with as much of wild nature as is possible maintained. And to keep up this character the Council are striving. The great use of a garden of this character is to show what plants and trees will grow in London naturally and simply. The Botanical Gardens are for this purpose very remarkable, and the Economic House, as well as the Victoria House, show many plants not generally seen; but these parts are generally utterly neglected by the visitors. There is also a school of gardening, and a ladies' class, with a kitchen garden, that surprises me by its success. The report of the leading gardeners, whom we asked to visit the gardens, will tell you of the excellent condition of the stock. But a garden of this character is of little pleasure to those living a long way off. It must be principally supported by persons living near, who want a place of quiet recreation. It is a bad place for sales, and, naturally, leading nurserymen prefer Vincent Square. I agree with you that the Society has relied too much on garden parties, &c.; but this is an important source of revenue. The real difficulty is the success of a minority, who call themselves a reform committee, to prevent the raising of the subscription. If this had been granted, as the majority accepted, our position would be now without difficulty. We are quite unable to keep up or pay the gardeners properly with the present income, and have to cut down many suggestions of our head gardener, Hawes, than whom there is no more capable London gardening superintendent.

The principal 'debt' is the debentures, which are only troublesome when the executors of deceased owners require immediate payment. The Horticultural Society suffered from this, and annulled their own; at least, I lost mine without any compensation. We proposed, with an increased subscription, to create a sinking fund to meet this. The 'reformers,' in reality, seem to wish to wreck the Society as it is, and turn it to some other purpose, destroying one of the most remarkable bits of natural scenery any town possesses. They laugh at a place for 'rest and meditation.'" *C. Brinsley Marlay, St. Katharine's Lodge, Regent's Park, August 31.*

OUR SUPPLEMENTARY ILLUSTRATION (CAMPANULA LACINIATA).—The "fairest Campanula in all Greece" is the description given of this plant by TOURNEFORT, who found it on the rocky island of Pholegandros, in the Grecian Archipelago, in the year 1700. It is figured in his *Voyage in the Levant*, and he there describes the plant as growing two feet high, forming a round, compact bush, with basal leaves (see fig. 66) 8 inches long by 2½ inches broad, deeply laciniate, and light, shining green in colour. The cauline leaves are smaller, being 2 to 3 inches long, diminishing in size on the upper part of the stem, which is woody, and as thick as a man's thumb, much branched, and laden with flowers at the extremities of the branches. The bell-shaped flowers are about 2 inches wide at the mouth, rather over 1 inch deep, and pale blue in colour. C. laciniata belongs to a section of this popular genus, which is composed exclusively of biennials, and includes C. lyrata, C. lanata, and C. tomentosa. It is said to have been introduced into British gardens in the year 1790, but the figure under this name in ANDREW'S *Botanist's Repository, VI.*, f. 385, published in 1804, represents Campanula tomentosa, as does also the figure of C. laciniata in NICHOLSON'S *Dictionary of Gardening*. In habit and in the shape of its flowers, as well as colour, this plant approaches the Caucasian C. mirabilis, but is more robust and erect, as well as being slightly pubescent all over the stems and leaves. C. laciniata is probably only hardy in the more southern and warmer parts of this country, and being a biennial, seeds will have to be relied upon as the means of propagation. For the specimen from which our illustration was taken we are indebted to Mr. BEAMISH, of Cork.

THE SHREWSBURY SHOW.—The receipts at the recent show of the Shropshire Horticultural Society, of which a full report was published in our last issue, were as follow:—*Cheap tickets sold before the Show took place*, £552, against £539 18s. 2d. in 1905; *receipts at the gates*, first day, £1,107 3s. 8d., against £813 7s. 4d. in 1905; second day, £2,210 7s. 3d., against £2,229 18s. 3d.; *total*, £3,869 10s. 11d., as against £3,583 3s. 9d. last year, being an increase of £286 7s. 2d. These particulars refer only to receipts at the gates and for purchased tickets, and do not include the value of tickets issued to subscribers, whose subscriptions amount to over £500, and for which subscribers are entitled to eight tickets for every guinea subscribed and four tickets for every half-guinea. By a misprint in our report last week, the sum given by Messrs. SUTTON & SONS as prizes for vegetables was stated to be £8 17s., instead of £17.

SCIENTIFIC COMMITTEE.—We are requested to announce that there will be no meeting of this Committee on September 11, but that the meetings will be resumed on September 25.

"EVENING NEWS" CHRYSANTHEMUM LEAGUE.—The following extracts from a letter addressed to us by the Secretary will be read with interest by lovers of the Chrysanthemum:—"May I ask you to bring under the notice of your readers the forthcoming show of the *Evening News* Chrysanthemum League, which is to be held at the R.H.S. Hall, Vincent Square, on September 20, 21, and 22? Our Committee and Judges include Mr. T. BEVAN, Chairman N.C.S., Mr. WITTY, Vice-Chairman N.C.S., Mr. D. B. CRANE, Chairman Floral Committee N.C.S., and the following Fellows of the R.H.S.:—W. A. CULL, W. HARRISON, R. F. FELTON, H. EVANS, D. INGAMELLS, C. H. CURTIS, G. WOODSTOCK, E. F. HAWES, and F. W. JONES. Last year we held our first show, when many thousands of visitors failed to get admission. We shall be offering gold, silver-gilt, silver, and bronze medals for the most meritorious trade exhibits, besides nearly 200 other prizes to members of the League who show their plants. Special instructions are given to the League members from time to time in the *Evening News* which assist them in the cultivation and keep their interest in the Chrysanthemums. Trade exhibits promise to be large in number, and a special section of the Hall will be given up to horticultural sundries. Early notification of intention to exhibit will be necessary, as there is already a marked desire on the part of professional growers to be represented, and the space reserved is very limited. There is also a limited amount of wall space, suitable for business announcements, &c., still unallotted. The success of this year's show is already assured, for in June nearly 7,000 plants,

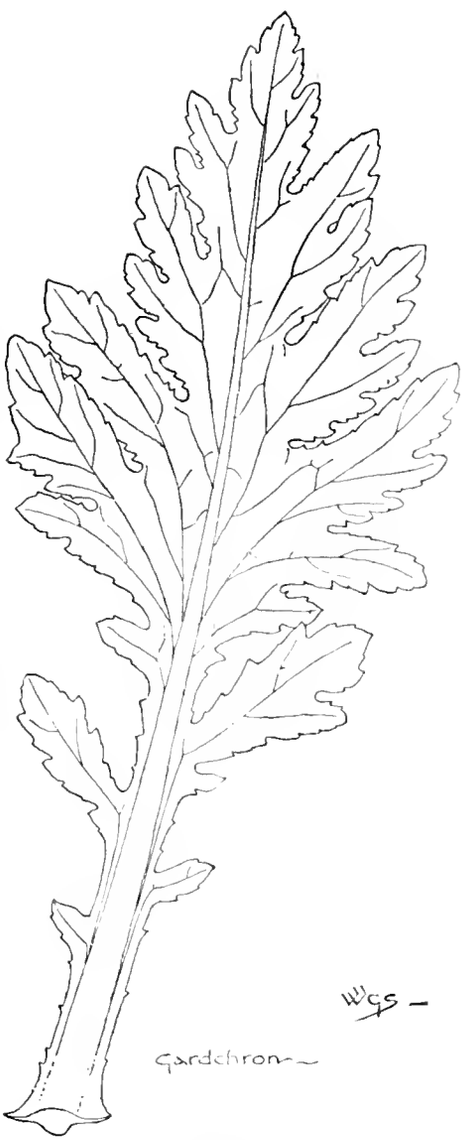


FIG. 66.—LEAF OF CAMPANULA LACINIATA (REDUCED).

(See page 165 and Supplementary Illustration.)

in 37 decorative Japanese varieties and 16 varieties of pompones, were applied for by members of the Chrysanthemum League, and, judging by the letters already to hand, &c., a very large number of members will compete for the many prizes offered. All communications on the subject should be addressed to the Secretary, *Evening News* Chrysanthemum League, Carmelite House, E.C.

THE NATIONAL DAHLIA SHOW, we may remind our readers, will be held on Thursday and Friday next, September 6 & 7, at the Crystal Palace. Mr. BROUSSON, the hon. secretary, informs us that it is expected the show will be a very good one.

BRITISH GARDENERS' ASSOCIATION.—The Right Hon. the Earl of PLYMOUTH has consented to become President of the British Gardeners' Association. From the first his lordship has expressed sympathy with its aims and objects. He is a large employer of professional gardeners, and owns the fine old Castle of St. Fagans, near Cardiff, as well as Hewell Grange, in Worcestershire, &c.

—— MEETING AT EDINBURGH.—On the occasion of the Royal Caledonian Horticultural Society's forthcoming Show at Edinburgh an address on the British Gardeners' Association will be given by the Hon. Secretary, Mr. J. WEATHERS. The meeting will be held in the Bible Society's rooms, 5, St. Andrew's Square, Edinburgh, on Wednesday, September 12, at 7 p.m. The chair will be taken by Mr. J. W. MCHATTIE, city gardener, and it is hoped that all gardeners present in Edinburgh at the time will make an effort to be present.

WYE COLLEGE.—We have before us the July number of the *Journal* of the South Eastern Agricultural College as Wye, Kent, which is an interesting production as showing the determined efforts that are now being made to shake off that stagnation in the application of scientific method to cultural proceedings which in former years we have had so deeply to deplore. Wye is taking a high place in the education of agriculturists, the number of pupils is increasing (there are now over a hundred), and former students in all parts of the world are creating a reputation for themselves and for their college. A Council of Agricultural Research which will concern itself solely with original research into matters bearing on agricultural and rural economy is proposed, and no doubt Wye College and its staff are particularly well adapted to carry out such proposals. The appointment of Mr. E. G. SALMON for the purpose of carrying on research into the nature and history of the fungous pests attacking cultivated plants is a matter for deep satisfaction. The work of such an expert can but be beneficial to the students, the neighbouring farmers, and to science generally. Details are given in the Report concerning the practical operations on the farm and the insects and other animal pests injurious to the cultivator. In this section Mr. THEOBALD states with reference to the Currant bud-mite that there is nothing satisfactory to report, but that the variety known as Boskoop Giant seems to resist attack more than any other variety, owing to its strong growth. Red and White Currants growing between the Black were found to be attacked with mite, especially the white variety. The remaining notes on insects, by Mr. THEOBALD, are too numerous to allude to at length, but they are of great interest and value to the cultivator. The whole report, indeed, is full of useful information and valuable suggestions. We can only find space in conclusion to direct attention to the inaugural address of Prof. MARSHALL WARD on the relations between botany and agriculture. This lecture should be read in connection with the latter part of Prof. F. W. OLIVER'S address to the British Association at York, from which we hope to give extracts later on.

THE HOME LIBRARY.—We have received from Messrs. WM. COLLINS, SONS & Co., Herriot Hill Works, Glasgow, four volumes of their "Home" library. Here we have, for the sum of one shilling each, such classics as "Kenilworth," "The Cloister and the Hearth," "Pickwick Papers," and "Scottish Chiefs." Each volume is clearly printed, illustrated, and neatly bound in red cloth. Other popular books will from time to time be added to the series, leaving less excuse than ever for neglect of standard tales and novels. To brighten a long journey or any other tedious time the fare here offered is as cheap and far more wholesome than some of the modern rubbish so freely offered for this same purpose.

BOTANICAL CONFERENCE IN PARIS.—The *Revue Horticole* announces that the International Association of Botanists has organised an international conference to forward the progress of horticulture and agriculture by the selection, introduction, and distribution of every kind of useful plant. The object of the scheme is to increase the knowledge of such useful plants as the members of the association in all parts of the world can collect (fruit, seed, cuttings, or young plants) for cultivation, when distributed to members interested in them and in other countries. Further, a certain number of centres will be selected where chosen species can be cultivated experimentally for some years, with a view to selection and propagation. It is also intended to obtain, from botanical excursions and from travellers and explorers, communications concerning economic plants unknown or not widely spread in the districts visited, so that these plants may be kept under observation with a view to making practical use of them. To assist in carrying out this programme an international conference of members was summoned on August 25, at the rooms of the Société Nationale d'Horticulture, to promote the establishment of a section especially organised to define the objects to be obtained and the best methods of proceeding. M. PHILIPPE DE VILMORIN was the organiser of the conference, and many experts and directors of botanic gardens have promised to collaborate.

PELARGONIUMS IN PARLIAMENT SQUARE.—The deplorable condition of the Pelargoniums which were wont to be such a feature in association with the noble architectural detail surrounding them has been the subject of comment in the daily Press. Some attribute the disaster to the noxious fumes from the wood paving laid as long ago as last November; others lay the blame on the poisonous vapours exhaled by motorcars and motor omnibuses. Meantime, so far as we know, no one has taken the trouble to verify either conjecture, and yet the Scientific Committee of the R.H.S. meets within a few hundred yards of the spot, and there are plenty of experts available whose opinion would be of value.

SOLANUM COMMERSONI.—We have received the following communication from M. LABERGERIE:—"I have had my attention called to a report (étude) in the *Gardeners' Chronicle* upon Solanum Commersoni, and more especially upon Solanum Commersoni 'Violet.' It results from the investigations made that there is apparently complete identity of this variety with that known as Blue Giant. I am therefore sending you a pamphlet including different communications upon the subject made to French scientific societies, and which indicate a considerable number of differences, proving the 'absolute authenticity' of the variations of Solanum Commersoni." The report alluded to contains an account of a visit of inspection made by various members of the Scientific Committee to the trial grounds of Messrs. Sutton, near Reading. Since then comparative investigations have been made of specimens derived from the same source, including microscopical analyses of the pollen and other features, and if the conclusions arrived at are different from those of some of our French *confreres* they are in conformity with those of other botanists and cultivators of that country.

Publications Received.—*Reports on the Botanic Station and Experiment Plots, Montserrat*, 1905-6. Several improvements have been effected in the arrangement of the station, and a number of interesting plants were added to the collection. The progress of the cotton industry was rapid and successful. Mr. W. R. Buttenshaw submits the report in the absence of Sir Daniel Morris.—*Journal of the Agricultural and Horticultural Society of India*, 1905. Contains a notice of articles sent out from, and received by the society, and brief notes on subjects of interest to local growers.

CYPRIPEDIUM × HARRI-LEEANUM, PARK LODGE VARIETY.

THIS hybrid (fig. 67), for which E. Roberts, Esq., Park Lodge, Eltham (gr. Mr. W. Carr), received an Award of Merit at the meeting of the Royal Horticultural Society on August 14, represents one of the finest of the dark-coloured Cypripediums.

It was obtained by crossing C. × Harrisianum superbum and a fine form of C. × Leeanum, and the combination gives yet another instance of the value of second crossing.

CUPRESSUS NOOTKATENSIS.

I SEND a photograph (see fig. 68) of a drooping form of Cupressus nootkatensis which I found in a clearing of the forest, about a month ago. The plant is 5 feet 9 inches high, and, I think, if it grows its branches will turn out to be falcate. I have never seen anything handsomer or better adapted in its way for decorative purposes. *G. W. F., British Columbia, June 11.* [The pendulous variety is not unknown in our nurseries and is included in the *Kew Hand-List* of Coniferæ as in cultivation in that establishment.—ED.]

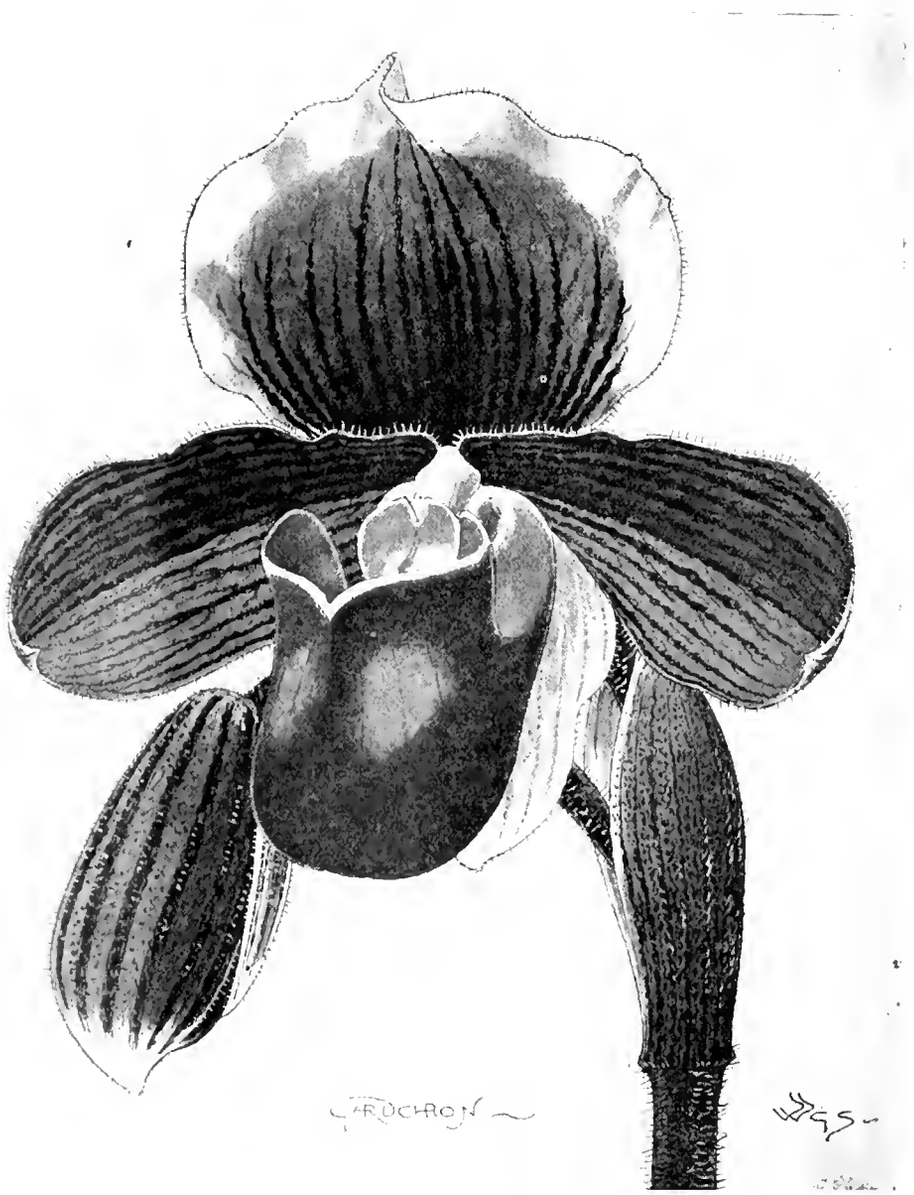


FIG. 67.—CYPRIPEDIUM × HARRI-LEEANUM, PARK LODGE VARIETY.

The habit of the plant resembles that of C. Harrisianum superbum, the leaves being pale green with dark green reticulation. The scape, which is very stout, is dark purple, and in this instance is twin-flowered. The fine dorsal sepal is suffused with purplish rose, and has ascending from the base some blackish purple feathered lines, the margin being pure white. The broad petals and lip are heavily tinged with reddish-purple.

It is a very fine flower, and although Cypripediums are now very numerous such productions are still rare. C. Harrisianum superbum, one of the early hybrids of Messrs. Veitch, seems to give excellent results where a strong constitution and dark colour are desired.

HOME CORRESPONDENCE.

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

VEGETABLES AT SHREWSBURY.—Wonderful as are the collections of vegetables staged yearly at Shrewsbury, and the best seem to excel their predecessors each year, yet it is rather a misfortune than a boon that through the liberality of members of the seed trade there are so many classes for collections. Those who saw the keen fight at Edinburgh last autumn between Messrs. Beckett and Gibson will not readily forget their wonderful collections. Nothing seen at that great Show excited so much interest as did that vegetable fight. Whilst Shrewsbury is our greatest English exhibition, and offers

the finest opportunity for vegetable competitions in the kingdom, yet it lacks that one central class which would gather to itself the finest of vegetable productions the nation can obtain. There we see the giants in plant culture and in plant grouping, in cut flower production and arrangement, and in fruit production and arrangement, all brought into the keenest competition with each other, and for prizes that have no equals in value. In all these sections there are premier or challenge classes, the winners in which can certainly claim to be for the year the champions in their specialities. Would there were, amidst the great abundance of ordinary or trade classes for vegetables, one competition at least that stood out as the champion class! We saw Mr. Beckett easily walking off with the 1st prize in Messrs. Carter's class and Messrs. Mills' class. Mr. Gibson, with equal ease, took Messrs. Sutton's 1st prize in their class, and that of the Society's collection. Mr. Dymock took Messrs. Webb's 1st prize easily; and Mr. Pope won Mr. Sydenham's. Now all these collections do, of course, help to make a fine show, but this method of assorting or sharing the best prizes is not war, and it is war, and war to the knife, between these great competitors and others we want to see. Let each one exhibit in whichever of the trade classes he may desire, but if the Society could create out of their class for twelve kinds a splendid champion class, with prizes beginning at £12, followed by five others of proportionate value, and make it a condition that all 1st prize-winners of the present year should be bound to compete in the champion class also, what a grand and exciting competition we should see! I am not sure whether even the champion Grape class would have such interest. *A. D.*

Batsford.—At Batsford the subtle skill of the landscape artist has been combined successfully with Nature, that formed the framework upon which was developed, with, no doubt, much pains and toil, perhaps the happiest result of the kind anywhere to be seen in this country. "Milton alone," says Horace Walpole, "seems, with the prophetic eye of taste, to have foreseen modern gardening. The vigour of a boundless imagination told him how a place might be disposed that would embellish Nature and restore art to its proper office, viz., the just improvement or imitation of Nature. Describing Eden, he speaks of the river which, 'with many a rill,' watered the garden, and fed

'Flowers worthy of Paradise, which not nice Art
In beds and curious knots, but Nature boon,
Pour'd forth profuse on hill, and dale, and plain.'"

Such poetic expression may also be justly applied to the combination of Art and Nature so masterly and successfully carried out at Batsford. Were Milton alive now, and had the opportunity of walking up those hillsides of Batsford, by the little purling streamlet, with its numerous waterfalls and lakelets, adorned with many healthy gems of Marliac's hybrid Lilies, all in full and luxuriant flower of rich and various colour, the banks adorned with many varieties of Bamboo and a rich collection of rare trees and flowering plants, he might feel satisfied to find that his prophetic forecast of the "combination of Art and Nature" had been so happily and amply realised. Needless to say, our party, which consisted of members of the Birmingham and Midland Gardeners' Association, thoroughly appreciated the privilege so kindly granted to us by Lord Redesdale of seeing this lovely place, and are grateful to the head gardener, Mr. Garrett, for the pains he took in showing us round. *W. Miller, Berkswell.*

Peach Culture Out-of-Doors.—"North Devon" (p. 154), expresses surprise that I did not mention the "blister" disease that has, he asserts, caused great damage to Peach trees during the past few years, and which, in his opinion, is the reason why many growers have largely abandoned planting Peach trees out-of-doors. I may remind him that I did not deal with the subject of diseases in my article. The fact of the leaves becoming "blistered" occasionally during the months of April and May does not afford grounds for abandoning the planting of Peach trees out-of-doors. By picking off the affected leaves (if numerous only the worst should be pinched off, the remainder being removed when a favourable change in the weather takes place) the trouble is removed and the trees soon recover from the slight check which the sudden cold following a short period of warm genial weather caused in the flow of sap, and ample healthy foliage is again developed. As stated, "blister in the leaves" is caused by a [fungus which makes its appearance after a] cold following a short period of warm, moist weather. The growth of the midrib becomes restricted, the sap is thereby checked in its circulation, and consequently the tissue becomes swollen into inert masses. I have never experienced difficulty in dealing with the "blister," and indeed, none need be looked for where young healthy trees have been selected, planted, and subsequently treated as recommended in my article. The fact of "North Devon" putting forward "blister" in the leaves as the reason for many growers (presumably in Devonshire) having largely abandoned planting Peach trees out-of-doors, goes to prove that the culture and treatment generally bestowed on these

Fig. 68.—Weeping variety of Cupressus nootkatensis. (For text see page 166.)

trees have not been in accordance with their requirements in the favoured climate of Devonshire. *H. W. Wand.*

—— There is another reason, a local one it is to be hoped, besides those enumerated by Mr. Ward that operates against the cultivation of the Peach out-of-doors, and that is the poor flavour of the fruit when it arrives at maturity, compared to that grown under glass. Personally, I know of three widely separated gardens in Scotland where the Peach is grown outside on south walls, and, although the trees grow well and sometimes produce heavy crops, the flavour of the fruits is not to be compared with those grown under glass in the same gardens. Doubtless, care in planting and after-treatment such as Mr. Ward advises, has much to do with producing well-ripened wood, but it is, nevertheless, questionable if growers situated outside the more favoured southern counties can afford to overlook climatic conditions in the light-hearted manner Mr. Ward disposes of them. On the west-coast of Scotland which usually experiences a large proportion of dull, damp weather, the wood ripens very imperfectly, the shoots remaining green and retaining their leaves until they are forced off by the first frosts. Under these circumstances, the result is that the crop is produced, not upon the previous year's shoots as is the case in sunnier localities, but on spurs. *M. M. N.*

Thames Bank Peach.—In reference to Mr. T. Coomber's enquiry (p. 154) regarding this variety, I find that Mr. John Fraser, The Nurseries, South Woodford, Essex, includes it in his list of fruit trees. *H. W. Wand.*

Kochia scoparia.—Is *F. J.* (p. 154) aware that there are two kinds of Kochia sold under the specific name of scoparia? The best habited one sent out, I believe, by Messrs. Cannell a year or two ago is a very close-growing variety similar in habit to Cupressus erecta viridis, and it grows in a compact pyramidal bush form without trimming. Used as "dot" plants this type is apt to grow too large and requires pinching. I obtained seed this year under the same name from another firm, but the plants proved disappointing, the growths being long and spindly and not nearly so effective. I find the same disappointment has been experienced in several other gardens where seed of the inferior strain was procured from the same place. Many other growers have probably the same cause for grumbling as myself. *E. Trollope, Coombe Park Gardens, Reading.*

—— I was surprised to read (p. 154) that in order to have plants of this balloon-shaped Kochia in correct form some training is necessary. I have seen large numbers of plants raised under glass of perfect form when grown in the open and to which not the least training has been given. A greater surprise, however, was to see recently at Messrs. Sutton & Sons Seed Farm, Reading, superb and perfectly-shaped plants from seed-sown in the open ground. *A. D.*

Kochia scoparia var. trichophylla.—Having grown this plant for several years, I am interested in the note on p. 154. This is the first time I have heard of cutting the plants to obtain well-shaped specimens. Whilst not wishing to criticise this method, I may say that good plants can be grown without adopting this system. Mr. James says "in some cases it has been stated that the plants grown as Kochia scoparia are not true to name." This is a conclusion I have also arrived at. In spring, when potting the plants, several which did not give promise of becoming bushy were thrown away. In a bed of about 50 plants only two have failed to develop into good shapely specimens; this without any cutting whatever. When visiting Messrs. Sutton & Sons' trial grounds at Reading, recently, they had growing there the true K. scoparia, the variety trichophylla (splendid bushy specimens) and several intermediate forms; plainly showing that this plant comes very variable from seeds. What is at present sold as K. scoparia is for the most part the variety trichophylla. Eventually it will, no doubt, be possible to obtain the plant true from seeds when careful selection and fixing has been practised. The true K. scoparia is not worth growing, except for its botanical interest. *A. O., Kew Gardens.*

Beech Trees and Lightning.—On p. 112 a coroner is reported to have said "he had for years read that there was no record of Beech trees having been struck by lightning, and he believed it was an accepted fact that Beech trees were never struck during a thunderstorm." This seemed to me rather curious, for I know of three Beech trees in the Royal Gardens here which have been struck. One standing in the neighbourhood of tall Oak trees, amid an avenue of Liriodendron, was so damaged that the bark was split round the whole length of the tree, and it died in consequence the following year. The two other trees also stood not far from giant Oak trees, and they were entirely cut to pieces. *W. H. Wind, The Royal Gardens, Het Loo, The Netherlands.*

—— Should any person interested in this subject happen to be in this neighbourhood I shall be pleased to show him two Beech trees which have been struck by lightning, the one last year and the other four years since. The former had the bark stripped all round the trunk to the height of several feet, and the injury gradually tapered off almost to the top of the tree. I well remember the two terrific flashes that caused the damage, the trees struck being in close proximity to my house.

This is sufficient proof to me that the Beech is no more immune from injury by lightning than any other tree. No doubt other readers could supply similar instances. I may also mention that trees of Oak, Spanish Chestnut and Sycamore were growing close by the Beeches. *A. Young, Witley Court Gardens, Stourport.*

—— The correspondence on this subject is very interesting to me. During a long life, and notwithstanding close observation of trees, I have never known a Beech tree to be struck. After the inquest on those killed recently whilst under the shelter of a Beech tree, and the statement of the Coroner that he had visited the tree and found "not a leaf injured," I went to Burnham Beeches in the company of a gentlemen of much experience and authority and examined these unrivalled monarchs of the past. We soon found a healthy Oak that bore evidence of injury by lightning, but the surrounding Beeches only showed the results of natural decay. Although many of them are hollow and the trunks distorted through pollarding in former times, they are in splendid health and vigorous growth. It was truly a worthy act to secure these characteristic Beeches as national possessions. I am sorry to say that one of them, "The Queen of the Beeches," is dead, having been killed, in my opinion, by the large fungus that is sometimes fatal to trees of considerable age. I noticed the remains of the fungus where it had fruited outside the trunk. The dead tree stands at the side of the road leading to the refreshment houses, but there are in the vicinity other trees of the same kind and age in good health although hollow. *W. Roupell, Streatham Hill, S. W.*

THE YUCCA.—Surely the fine group of Yuccas represented in the *Gard. Chron.* for August 18 consists of Y. pendula not Y. gloriosa. Whether these be separate species or merely varieties of the same may be an undecided question, but Y. pendula is far the more desirable form, both on account of its more graceful habit and its far greater frequency in flowering. *Herbert Maxwell.* [The species shown was Y. recurvifolia, a form of Y. gloriosa. —ED.]

ROSES AND HOW TO GROW THEM, AND FERNS AND HOW TO GROW THEM. By G. A. WOOLSON. [London: WM. HEINEMANN]. As these two books belong to the same series they may be considered together. Both are full of information on apparently inexhaustible topics and probably an ever-ready public will appreciate them. The volume on Roses is partly drawn up from articles in *The Garden Magazine* and *Country Life* in America, and Mr. LEONARD BARRON furnishes a chapter to it. There are plenty of illustrations, and the letterpress includes cultural directions and lists of varieties suited for special uses. *Ferns and How to Grow Them* is "designed simply as a practical work for the benefit of the amateur Fern culturist." There is an abundance of pictures reproduced from photographs, and the whole makes an attractive volume. It should be noted that both "Roses" and "Ferns" are written with special reference to the cultivation of these plants in America.

PLANT PORTRAITS.

APPLE CALVILLE DUQUESNE.—A fine dessert Apple in season from November to January. Fruit globular, with a deep eye and short stalk set in a deep basin. Skin yellow, flushed with rose; flesh white, flavour excellent.—*Revue Horticole*, August 16.

ARISTOLOCHIA ORNITHOCEPHALA. — *Revue Horticole*, August 16.

CYPRIPEDIUM GERMAINE OPOIX.—A cross between "Madame Colinet" and C. Fairrieanum.—*Revue Horticole*, July 16.

OPHIOPOGON REGNIERI.—*Revue Horticole*, August 16.

Obituary.

MRS. H. BALLANTINE.—We have heard with much regret of the bereavement of Mr. H. Ballantine, whose wife died on the 17th ult. Mr. Ballantine is gardener to Baron Sir Henry Schröder, The Dell, Egham.

HENRY LUCKHURST.—Many of our readers will hear with regret of the death of Mr. Luckhurst, who was horticultural lecturer for the Derbyshire County Council, and a frequent contributor to the horticultural press.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 28.—The show on Tuesday last at the ordinary fortnightly meeting was smaller than usual, and there were few visitors, London now being in the condition it is customary to describe as "empty," though there are few indications of this to be seen in the streets.

Orchids were shown well, and the display of these flowers was probably as good or better than any previously made in the month of August. The ORCHID COMMITTEE recommended one First-Class Certificate and four Awards of Merit to novelties. The FLORAL COMMITTEE recommended five Awards of Merit, but the FRUIT AND VEGETABLE COMMITTEE did not have occasion for making any award to novelties. Messrs. SUTTON & SONS, however, made an interesting exhibit of Runner Beans, and a group of fine Melon fruits came from the Reading University College Gardens. In the afternoon a few new Fellows were elected, and a paper by Mr. R. H. CURTIS on "Phenology in its Relation to Horticulture" was illustrated with lantern slides.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, displayed three new show Dahlias. The petals were not of the best form, although the colours were good. He also showed a new Cactus Dahlia named John E. Knight.

HERR HENKEL, Darmstadt, showed some interesting plants of Abies lasiocarpa var. Arizonica under the name of A. Arizonica, var. Argentia. Some of the specimens were raised from seeds and others were grafted plants. The seedlings, which we presume were of the same age as the others, were about six times as large. This Californian Pine, which was figured in the *Gardeners' Chronicle*, March 2, 1901, is remarkable for its white, cork-like bark. H. HENKEL also showed some new species of Nymphæas.

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, showed five new species of Vitis, better known as Ampelopsis, most of which have been described in our columns. The most handsome was V. magolophylla. V. Henryana was figured in these columns October 28, 1905, and is very decorative. Senecio clivorum was shown in flower. Messrs. VEITCH & SONS also filled a goodly portion of one of the centre

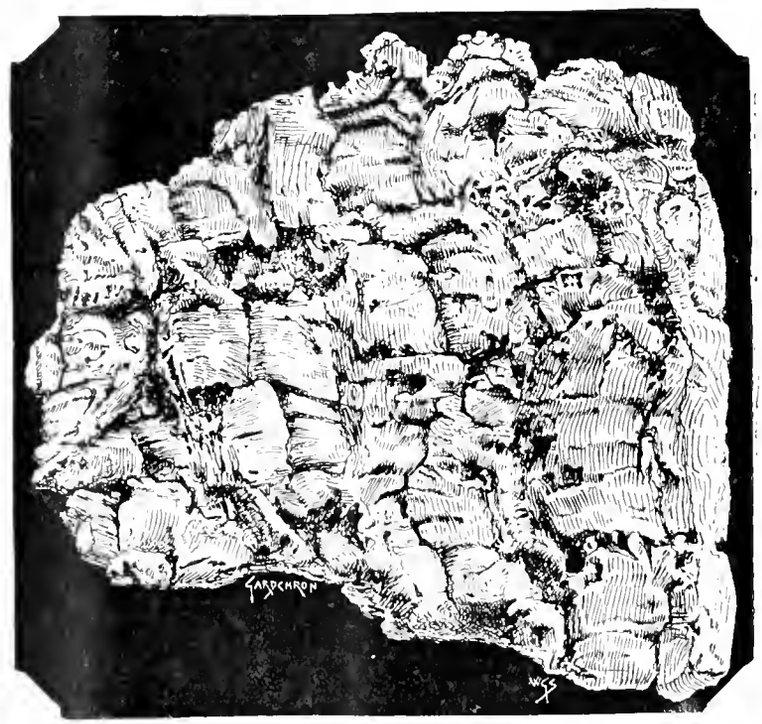


FIG. 69.—PORTION OF THICK, CREAM-COLOURED CORKY BARK OF ABIES LASIOCARPA, VAR. ARIZONICA.

Floral Committee.

Present: H. B. May, Esq., in the chair, and Messrs. C. T. Drnery, John Green, T. W. Turner, G. Reuthe, J. W. Barr, R. Hooper Pearson, John Jennings, W. Bain, C. J. Salter, Chas. Jeffries, E. T. Cook, Chas. E. Pearson, J. T. Bennett Poë, E. H. Jenkins, W. J. James, R. C. Notcutt, Amos Perry, and Jas. Walker.

Messrs. CARTER, PAGE & Co., 52 and 53, London Wall, E.C., staged an extensive collection of Cactus Dahlias. The exhibit was very representative, and the flowers embraced a wide range of colour. Adjoining the Cactus varieties was a collection of the miniature flowered Pompon Dahlias. (Silver Flora Medal.)

Messrs. JAMES STREDWICK & SON, Silver Hill Park, showed a number of new Cactus Dahlias. They were all good flowers, but not distinct enough from existing varieties, with the exception of one which will be found described under "Awards."

Messrs. HOBBIES, LTD., Dereham, Norfolk, showed vases of the large, coarse-petalled Dahlias known as the "Peony-flowered" strain. These flowers are suitable for decorative purposes, where a bold effect is needed from a distance. The petals, however, are very coarse, and a row of the beautiful Cactus type, which formed an edging to the group, made them appear the more so by comparison. The "Peony-flowered" type appears to flag very quickly, even if the stems are placed in water.

tables with decorative flowering plants—Begonias of the winter flowering type, Ixoras, greenhouse Rhododendrons, Eschynanthus grandiflorus, Swainsonia galegifolia, Leonotus Leonurus, Solanum Wendlandi, producing its magnificent flowers, whilst growing in pots of very small size; Crowea latifolia major with larger flowers than those of the type, &c. All of these showed the excellent cultivation for which this firm is renowned. (Silver Flora Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, N., showed a batch of the pretty Chironia ixifera that received an Award of Merit last year. Messrs. Low also showed some good Carnations.

HARRY JAMES VEITCH, Esq., East Burnham Park, Slough, showed spreading panicles of the yellow-flowered Koelreuteria paniculata, a hardy shrub which was figured in these columns November 5, 1887.

Messrs. H. CANNELL & SONS, Swanley, Kent, staged a semi-circular group of Cannas; the flowers showed the same high culture, beauty of colour, and breadth of petal one is accustomed to see in these flowers from the Swanley nursery, and the varieties were numerous. (Silver Flora Medal.)

Sir EDMUND LODER, Bart., Leonardslee, Horsham, Sussex (gr. Mr. W. A. Cook), showed a number of interesting hardy plants from his famed gardens. A single leaf of Gunnera

manicata was large enough to shelter half a dozen persons. The brilliant Berberidopsis corollina was in fruit. Calycanthus floridus was in both fruit and flower, and there were sprays of many other shrubs, Lilies, &c. (Silver Banksian Medal.)

Messrs. KELWAY & SON, Langport, Somerset, again showed an extensive collection of Gladioli. (Silver Flora Medal.)

Messrs. GUNN & SONS, Brookfield Nurseries, Olton, staged garden Phloxes in all the best varieties. A white kind of exceptionally dwarf habit attracted much attention, and will be found described under "Awards." (Silver Banksian Medal.)

Mr. AMOS PERRY, Enfield Chase, and Winchmore Hill, N., showed a selection of border flowers, and many varieties of hardy Nymphæas. (Silver Banksian Medal.)

Messrs. G. & A. CLARK, LTD., Dover, showed a seasonable array of hardy garden flowers. (Bronze Flora Medal.)

Hardy flowers were also shown by Messrs. BARR & SONS, King Street, Covent Garden, London, W.C.; by Mr. G. REUTHE, Keston, Kent; and Messrs. GEO. BUNYARD & Co., Maidstone. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, showed small pot plants of Codiæums (Crotons) in great variety.

Messrs. J. CHEAL & Co., Crawley, Sussex, showed a very large number of ornamental hardy trees and shrubs and others in flower. Oaks, Limes, Elders, Honeysuckles, Maples, Ashes, and other hardy trees were shown with variegated and curiously shaped leaves. Among the shrubs in flower we may instance Spiræas, Genistas, Hypericums, Veronicas, and Tamarix. Messrs. CHEAL also showed a very good collection of Pompon and single-flowered Dahlias. (Silver Banksian Medal.)

Messrs. THOMAS WARE, LTD., Feltham, Middlesex, showed Cactus and show Dahlias of good quality. (Silver Banksian Medal.)

Impatiens Olivieri was shown as flowering sprays by Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr. Mr. W. Bain). Sir TREVOR cultivates this new flesh-coloured species and I. Holstii out-of-doors during the summer season, where the latter species especially makes a very fine display.

Dahlia viridiflora, the green-flowered Dahlia, a monstrosity, which has been frequently figured in these pages, was shown by H. T. PITT, Esq., Stamford Hill, but on this occasion it was somewhat redundantly honoured by the further name "Doris Howard."

AWARDS.

Single Dahlia Fugi San.—A good single flower, of rich-buff colour with brilliant red coloured ring round the disc. Shown by Messrs. CHEAL & SONS. (Award of Merit.)

Cactus Dahlia Dr. G. G. Gray.—A variety of brilliant crimson colour, large size, good form, and having incurved claw-like florets. Shown by Messrs. JAMES STREDWICK & SON. (Award of Merit.)

Cactus Dahlia Princess Mary.—A very large, well-formed flower with rolled florets, scarcely so incurved as those of the preceding variety. In colour there are shades of orange and mauve, the general effect being one of coral—exceedingly pretty. Shown by Messrs. HOBBIES, Ltd. (Award of Merit.)

Gilia coronopifolia.—This is an annual or biennial species worthy of recommendation. The fine specimens shown by Messrs G. & A. CLARK, Ltd., Dover, had grown 4 feet high, and the flowering portion was nearly 2 feet in length. The flowers, as shown, are produced in axillary clusters, they are brilliant red in colour with ten fine white lines on the interior of the corolla, two on each segment. The corolla segments do not reflex, but are spread out flat. The leaves are very narrowly divided and taper to a fine point. The flowers are illustrated in the *Botanical Register*, t. 1691, but the spotting on the corolla segments is shown too conspicuously there, and the colour of the flowers has faded. In warm localities seeds may be sown out of doors in autumn, but in other places seeds should be sown and the plants grown in pots for planting out in May. It is an old plant, but is not often seen in gardens. (Award of Merit).

Phlox Tapis Blanc.—This is the dwarfest white perennial Phlox, described as never growing more than one foot in height. Some of the plants shown were not more than half a foot. The flowers are pure white, an inch and a half across, and apart from its dwarfness the quality is of the best. Numerous plants were shown by Messrs. GUNN & SONS, Olton, Birmingham. (Award of Merit.)

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair, and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, Arthur Dye, W. Bolton, J. W. Odell, H. Little, W. Boxall, F. Menteith Ogilvie, A. A. McBean, G. F. Moore, H. G. Alexander, and J. Charlesworth.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver-Gilt Flora Medal for a very fine group composed largely of their handsome hybrid Orchids, of which in the present group the beautiful and variable Cattleya Iris varieties took the lead, each end of the group having a selection of very fine varieties of it, scarcely two alike in colour, though the greater part had bronzy sepals and petals and some shade of ruby-purple in the lip. In the centre were a selection of the lilac-tinted Brasso-Cattleya Madame Chas. Maron, with one plant of the fine white B-C. Queen Alexandra, the bloom being a model in shape and with a finely-fringed labellum, the very handsome Odontoglossum Othello and other Odontoglossums; Miltonia Hyeana, with a much larger and more rose-tinted flower than the original shown at the last meeting, three clear white-flowered plants of Cattleya Gaskelliana alba, and C. Fabia, the neat Lælio-Cattleya Alcyone. Other Lælio-Cattleyas were in the group, which among other fine varieties of species included Epidendrum confusum, Brassia Lawrenceana longissima, Oncidium triuliferum, O. ornithorhynchum album, Angræcum japonicum, Cycnoches Egertonianum viride, &c.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a very varied and interesting group comprising many rare Orchids. In the centre was an arrangement of the singular and beautiful Arachnanthe Lowii, fourteen drooping spikes of its extraordinary flowers being displayed, the yellow-ground basal ones being very dissimilar from the others. The four special novelties in the group were Lælio-Cattleya × elegans His Majesty, Cypripedium Baron Schröder var. ardens (for both of which see Awards), Lælio-Cattleya Bletchleyensis magnifica, a very large and richly-coloured flower, and L.-C. Mrs. Robert Measures (L.-C. elegans × L. xanthina), a very pretty and distinct hybrid with upright spikes of flowers, the sepals and petals of which were Indian yellow and the front of the lip violet-purple. Lælio-Cattleya "Henry Greenwood," var. The King, had a noble flower and very broad, finely-coloured lip.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), secured a Silver Flora Medal for an effective group made up principally of many specimens of the good form of Lælio-Cattleya Nysa (L. crispa × C. Warscewiczii) raised at Gatton Park. Arranged with them were a very fine Cattleya, Mrs. W. J. Whiteley, a good Lælio macrostachya, Sobralia xantholeuca, the pretty and now rare Oncidium zebrinum, good Lælio-Cattleya Phryne and L. C. Bletchleyensis, Dendrobium rhodostoma, D. aureum, the pretty Spathoglottis Colmanii, Cattleya Parthenia, and a singular little hybrid raised at Gatton Park between Brassavola nodosa grandiflora and Lælia flava. In habit it comes nearest to Brassavola nodosa, having slender pseudo-bulbs and fleshy leaves. The flowers are in short spikes and about two inches across; the narrow sepals and petals are yellowish, with purple spots, the lip being white. The plant was named Brasso-Lælia fladosa.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), staged a small group for which a Silver Banksian Medal was awarded. It contained a plant of the rare Angræcum caudatum, with a spike of six flowers; the sepals and petals and the foot-long slender spurs were greenish, tinged with red-brown, and the labellum white. Also a box of fine strong plants of the handsome leafed Dossinia marmorata, a pale coloured Cypripedium between C. Charlesworthii and C. Dayanum, C. × Unixia superbum, Lælio-Cattleya elegans, &c.

Messrs. HUGH LOW & Co., Bush Hill Park, were awarded a Silver Banksian Medal for a varied group in which were noted a selection of Dendrobium Phalænopsis, D. sanguinolentum, Catasetum macrocarpum, Stanhopea oculata, S. Wardii, Oncidium microchilum, O. carthaginense, O. oblongatum, a very clear white Cattleya Gaskelliana alba, and other Cattleyas; Phalænopsis violacea, Low's variety, very fine in colour; Lycaste leucantha, Cypripediums, &c.

Messrs. STANLEY & Co., Southgate, received a Silver Banksian Medal for an effective group, in the centre of which was a finely flowered plant of Oncidium Stanleyi (see Awards). With it were a very dark form of O. curtum, Oncidium incurvum album, Cypripedium A. de Lairesse, several Lælio-Cattleya elegans, some good examples of Odontoglossum Harryanum, O. Hunnewellianum, Cattleya Harrisoniana, C. bicolor, &c.

Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander), sent three very fine Orchids, of which Cattleya Iris "Countess of Morley," a noble flower quite unique in colour, secured the only First Class Certificate awarded. The others were Lælio-Cattleya Berthe Fournier var. Mrs. Benson, a very pretty and fragrant variety with rose-purple coloured flowers having rosy crimson labellum, with fine gold lines at the base; and a very strong plant of Sophro-Cattleya Chamberlainiana triumphans, with nine flowers.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya vestalis, Westfield variety (maxima × Dowieana aurea), a good light-coloured flower, with the veining of C. maxima distinctly shown in the lip; and Cattleya bicolor, Westfield variety, a finely formed flower with broad yellowish-green sepals and petals and rose-crimson lip with white margin in front.

The Honourable WALTER ROTHSCHILD, M.P., Tring Park, Tring (gr. Mr. Arthur Dye), again sent the handsome Cattleya Hardyana, "Tring Park variety," which had previously secured a First-Class Certificate, and a good example of Brasso-Cattleya Madame Chas. Maron (B. Digbyana × C. Warscewiczii).

E. ROBERTS, Esq., Park Lodge, Eltham (gr. Mr. W. Carr), showed Cypripedium Olga Bagshaw (callosum × oenanthum superbum), a pretty hybrid.

R. G. THWAITES, Esq., Streatham (gr. Mr. Black), showed the beautiful Odontoglossum crispum xanthotes Charlesworthii in fine condition.

Col. H. CARY BATTEN, Abbot's Leigh, Bristol, sent Lycaste leucantha.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Iris Countess of Morley (bicolor × Dowiana aurea), from Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). One of the most beautiful of a very handsome class. Sepals and petals of a pretty dark apricot-yellow tint, lip finely developed with a yellowish ground colour tinged with clear rose-pink.

AWARDS OF MERIT.

Sobralia Lowii, from HENRY LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. Howard). A rare, dwarf growing species with small bright rose-purple coloured flowers.

Lælio-Cattleya elegans His Majesty, from Messrs. SANDER & SONS. A very remarkable variety of good size, fine colour, and producing a remarkable number of flowers, the two spikes bearing 12 and nine flowers respectively. The sepals and petals are purple, and the front of the lip rich claret-purple.

Cypripedium Baron Schröder, var. ardens, from Messrs. SANDER & SONS. A fine variety, differing from the original form in the heavier and broader dotted purple lines on the dorsal sepal and in the generally darker tint.

Oncidium Stanleyi, from Messrs. STANLEY & Co., Southgate. A beautiful natural hybrid, supposed to be a cross between O. Marshallianum and O. curtum, and bearing evidence of the former in the sepals and petals, and the latter in the lip, which is large and of clear yellow colour. The sepals and petals are yellowish with light-brown markings. The fine plant bore two spikes of 121 flowers.

CULTURAL COMMENDATION.

To P. L. HUDSON, Esq., Pampisford, Cambridgeshire, for a very fine specimen of Cypripedium Charlesworthii with 15 flowers.

Fruit and Vegetable Committee.

Present. Geo. Bunyard, Esq., Chairman, and Messrs. Jos. Cheal, W. Bates, S. Mortimer, A. Dean, A. R. Allan, Geo. Kelf, H. Farr, H. J. Wright, J. Davis, J. Vert, John Lyne, F. O. Lyne, Geo. Reynolds, J. Jaques, J. Willard, C. Foster, Owen Thomas, and H. Markham.

Messrs. GEORGE BUNYARD & Co., Maidstone, Kent, showed a collection of fruits including

Apples, Pears, Plums, Peaches, Cherries, Nectarines, and Melons. The hardy fruits were principally of dessert varieties, especially good dishes of Apples being Lady Sudeley, Duchess's Favourite, Beauty of Bath, and Calville Rouge Precôce. Of Pears Williams' Bon Chretien, and Souvenir du Congrès were among the best. Of Plums there were some very fine fruits of the old Greengage.

UNIVERSITY COLLEGE, Reading (Horticultural Department: superintendent, Mr. Foster), staged a collection of about 40 Melons in many varieties. The group was prettily decorated with trailing sprays of Ampelopsis and other coloured foliage. Good examples of Earl's Favourite, Hero of Lockinge, Superlative, &c., were shown.

Messrs. SUTTON & SONS, Reading, showed an interesting collection of dwarf, runner, wax-podded and other coloured Beans. A good, long, straight variety of dwarf Bean is Princess of Wales. Among the runner type, the now well-known Abundance was shown in fine condition. Sutton's A1 is also a good Runner Bean, the pods being very dark in colour and of a large size. We also noticed Prize-winner, Best of All, and a long, pale-coloured seedling, labelled Seedling No. 2. There were also coloured varieties of Beans—blue, red, yellow, &c.; the wax pods and the Butter Beans that are largely grown on the Continent being of a beautiful yellow colour. More curious than all are the striped varieties—bright red on a yellow ground—such as Striped Red New Zealand and the pretty Fire Fly. Mont d'Or is a wax-podded variety of a lovely shade of yellow.

Messrs. WILLIAM PAUL & SON, Waltham Cross, Herts., showed fruit trees in pots: Apples, Pears, Plums, Figs, Nectarines, and Peaches. We may mention a fine plant of Apple Wealthy and a good specimen of Grosse Mignonne Peach.

Messrs. CARTER, PAGE & Co., 52 and 53, London Wall, London, showed 34 distinct varieties of Tomatos. All the types were included—the round, crinkled, yellow-fleshed and dessert, the Cherry, the Currant, the Plum, &c. Some very good fruits of the Perfection type were seen. Adjoining the Tomatos were many ornamental Gourds.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

AUGUST 23, 24, and 25.—The annual exhibition of this Society was held on the above dates in the Duthie Public Park, Aberdeen, the use of which was kindly granted by the City Council. The entries this year were somewhat fewer than those of last year, but what was lacking in numbers was amply made up in quality. So far as the general arrangements of the marquees were concerned, much the same plan as in former years was carried out by the secretary, Mr. J. B. Rennett, Advocate, Aberdeen.

PLANTS IN POTS.

A first glance around showed that there was no entry in the class for tables of stove or greenhouse plants, arranged for effect, 8 feet by 6 feet. The absence of these beautiful exhibits recalled to mind the splendid records made in this class by Mr. John Proctor, when head gardener to the late Sir William Henderson, of Devanha, Aberdeen. The Silver Medal for the best specimen plant in flower went to Mr. ALEXANDER BREBNER, Dalhebity, for Disa grandiflora. It was a fine specimen, well grown, and having about four dozen flower trusses. Mr. ALEXANDER DUNCAN, Albyn Place, Aberdeen, took 2nd honours with a fine Ixora Williamsii. The Silver Medal for the best specimen foliage plant was worthily gained by Mr. J. W. BREBNER, Ardo, Bellhelvie, with a specimen of Aspidistra lurida variegata—a large plant, and shown in fine health. Second honours went to Mr. DUNCAN, Kepplestone, for a remarkably well-grown Pandanus Veitchii. Ferns were a very fine show. Mr. W. S. MACKIE, Morken, Cults, led for the best stove or greenhouse Ferns; while the Silver Medal for the best six Ferns (at least three distinct varieties) went to Mr. ALEX. DUNCAN, Kepplestone. The collections of Orchids and Crotons, for which in each case Mr. DUNCAN, Albyn Place, Aberdeen, deservedly carried off the chief honours, were exceedingly good. This successful gardener was also placed first for Dracænas. For Zonal Pelargoniums the Silver Medal went to Mr. WILLIAM MACKIE, Morken. For the best six plants for table decoration the Silver Medal and likewise 2nd place were worthily earned by Mr. J. PETRIE, The Gardens, Crathes Castle, Kincardineshire. Other leading prizemen in this division not already mentioned included Mr. GEORGE MAITLAND, Woodside, Aberdeen; Mr. A. GILLESPIE, Northfield Place, Aberdeen; and Mr. JAMES ANDERSON, Mealmarket Street, Aberdeen. Amateurs also made a good display, and, although their tables were just a little crowded, the show they made evoked no little admiration. For Petunias they beat the professionals. The leading places were taken by Mr. JAMES MORGAN, Roslin Street, Aberdeen, and Mr. GEORGE MAITLAND, Great Northern Road, Aberdeen.

CUT FLOWERS.

The drought experienced in the late spring and early summer, with slight frost later on, were not conducive to bringing flowers, fruit and vegetables to their fullest maturity, and those that did survive that trying period suffered from the effects of the violent thunderstorms which recently prevailed. With all these drawbacks, however, the cut flowers upheld the traditions of the Royal Horticultural Society of Aberdeen. There was a capital display of Roses, the Silver Cup for the best 24 blooms, H.P. and H.T., or either, named, dissimilar, going to Mr. GEORGE MCLENNAN, Fetteresso Castle, Kincardineshire, for a very fine entry. Mr. ALEX. DOUGLAS, Kepplestone House, was 2nd. Mr. A. HARPER, Ruhislaw Park, Aberdeen, gained the Silver Medal for the best 12 blooms, his entry being a very meritorious one. For Pompon Dahlias and Cactus Dahlias Mr. J. D. CROZIER, Durris, Kincardineshire, took both the Silver Medals with very fine entries. Mr. ALEXANDER BREBNER, Dalhebity, was also very successful for Cactus Dahlias. For 12 bunches of hardy flowers Mr. JOHN PETRIE, Crathes Castle, deservedly won the Society's Silver Medal. Among the other names worthy of mention we must include Mr. JAMES ANDERSON, Aberdeen (Asters); Mr. JOHN GRIEVE, Woodside (French Marigolds); Mr. WILLIAM COUTTS, Ellon; Mr. ALEXANDER DOUGLAS, Kepplestone House; Mr. ALEX. GRIGOR, Fairfield House, Aberdeen; Mr. W. S. MACKIE, Morken; Mr. JOHN PETRIE; Mr. W. COUTTS, Ellon; Mr. WILLIAM SCORGIE, Springhill House; and Mr. JAMES ANDERSON, Aberdeen. The display of Sweet Peas was very good, the best being from Mr. ALEXANDER GRIGOR, Fairfield. The display of bouquets and bouquets for table decoration were as good as have ever been shown in Aberdeen—and that is saying much. Mr. ALEXANDER GRIGOR showed some beautiful specimens of hand bouquets and brides' bouquets, and also buttonhole bouquets. Special mention should be made of the exhibits in this tent from Mr. JAMES STRACHAN, Cruickshank Botanic Gardens, Aberdeen, for which he was deservedly awarded the Society's First-class Diploma of Merit.

Mr. GEORGE JOHNSTON, florist, 473, Union Street, Aberdeen, made his first appearance at this show as a florist, and his handiwork evoked the admiration of all who looked upon it. Mr. JOHNSTON carried off the leading honours for wreaths, hand bouquets (colours), and spray or shower bouquet of white flowers. Messrs. KNOWLES & SONS, florists, Aberdeen and Kent, had the leading prize for sprays suitable for ladies' wear. For Roses, Messrs. ADAM & CRAIGMYLE, Aberdeen, and Messrs. JAMES SIMPSON & SONS, Dundee, came out grandly, the local firm's exhibits being greatly admired and well worthy chief honours.

FRUIT AND VEGETABLES.

Considering the poor season hardy fruits were well represented, and the quality was good. Gooseberries and Strawberries were not exhibited in such large numbers as is usual, but the quality was well maintained. Blackberries were the out-standing feature, both in quality and numbers. Grapes were poorly represented, and were distinctly under the average. The honours for Grapes were divided between Mr. A. DOUGLAS, Kepplestone House, and Mr. PETRIE, Crathes Castle. Tomatos were of good quality but lacking in numbers. Apples and Pears were neither numerous nor of average quality. Mr. J. FERGUSON, Linton Gardens, Dunecht; Mr. PETRIE, Crathes Castle; and Mr. WILLIAM SCORGIE, Springhill House, won prizes for Apples and Pears. Melons were rather poor, which must be attributed to the dull weather. Honourable mention in the fruit classes must also be made of Mr. WILLIAM HARPER, Perth; Mr. J. SMITH, Countesswells; Mr. WILLIAM COUTTS, Ellon; Mr. GEORGE TAYLOR, Inchgarth: and Mr. J. FERGUSON, Linton Gardens.

VEGETABLES were fairly well shown. Potatos were well represented. Mr. FRANK KINNAIRD, Broomhill, Aberdeen, and Mr. WILLIAM LAWSON, Oakland School, Aberdeen, were the chief winners in the professional section for best collections.

MISCELLANEOUS EXHIBITS.

Messrs. STORIE & STORIE, Glencarse, near Dundee, had a table of Apples, Pears and Plums in pots. Messrs. KNOWLES & SONS, Aberdeen, had a fine display of wreaths, crosses and bouquets. Messrs. BEN REID & Co., Aberdeen, showed a collection of plants and flowers, their stand measuring over 100 feet long. It proved both interesting and instructive, and was much admired. Messrs. W. SMITH & SON, Aberdeen, had pot plants, cut flowers, and floral decorations. It was one of the finest exhibits ever seen in Aberdeen. Messrs. COCKER & SONS, Aberdeen, the well-known Rosarians, were worthily represented. Their devices and special exhibits of bouquets, &c., excited much admiration. Mr. M. H. SINCLAIR, florist, Aberdeen, had a choice display of cut flowers, including a splendid collection of American Tree Carnations and a fine assortment of giant-flowered Sweet Peas.

DEVON AND EXETER HORTICULTURAL.

AUGUST 24. The annual exhibition of the above society, held on this date in Northernhay Park, was, taken on the whole, equal to the standard of past years, although the absence of a few of the leading growers of vegetables was noticed. The entries totalled fewer than last year. The exhibits of Grapes were a feature.

FLOWERS: OPEN CLASSES.

In a class for 18 Dahlias of the show and the fancy types, in not fewer than 12 distinct varieties, the 1st prize was won by Mr. W. B. SMALE, Torquay. Among his best flowers were Arthur Acock, Purple Prince, J. T. Saltmarsh and Miss Cannell.

The similar class for 18 Double Cactus Dahlias, in 12 distinct varieties, was won by Messrs. JARMAN and Co., Chard, the collection including Cockatoo, Pearl, Conrad, and others. (A protest was entered because 15 varieties were shown in this collection, but the judges interpreted the reading of the schedule as not fewer than 12 distinct kinds.)

Competition was keen in the class for a decorated table measuring 4 feet by 8 feet. The schedule allowed both fruit and flowers to be used, but no Orchids. The 1st prize was won by W. BROCK, Esq., Parkerswell (gr. W. Rowland), for an exceptionally pretty table, the subjects used being Gloriosa superba, Francoa ramosa, Montbretias, Smilax, and Gypsophila.

PLANTS.

W. BROCK, Esq., was the only competitor in the class for six stove and greenhouse plants, and he was awarded the 1st prize for good specimens of Ixora fulgens, I. Williamsi, Chironia ixifera, Dipladenia amabile, and Stephanotis floribunda. Mr. BROCK was also 1st in the class for six stove and greenhouse Ferns, with fine specimens. The best six Adiantums, in distinct varieties, were shown by Mrs. C. HEARN, Alphington (gr. G. J. Anning). The plants included A. decorum, A. grandiceps, A. Veitchii, and A. cuneatum.

Mr. BROCK was again to the front for a collection or group of plants arranged in an oval and occupying an area of 11 feet × 15 feet. The principal subjects in the exhibit were Codiæums, Abutilons, Coleus, Humeas, Campanula pyramidalis, and Lilium auratum. The second prize was awarded Mr. O. BURTON, Digby's, for a nice group in which standard Fuchsias were effectively introduced.

Mr. BURTON was also 1st for six specimen Fuchsias, for six single flowered tuberous-rooting Begonias, for six Zonal Pelargoniums, and for six Coleus. In the classes for six double-flowered tuberous-rooting Begonias, six Caladiums, six Gloxinias, and three pots of Liliums, H. TOWNSEND, Esq., Exeter (gr. E. Phillips), won 1st prize in each case, his Caladiums being especially good. Competition in the specimen plant classes was far from strong; in several cases there was but a single entry.

Mrs. C. HEARN won the 1st prize for foliage Begonias.

CUT FLOWERS.

The best 12 bunches of hardy or perennial flowers in distinct kinds were shown by Col. SANFORD, Nynehead Court (gr. S. Kitley), 2nd Mrs. SAVILE, Barley House (gr. J. Rogers). Among the prizewinners in the separate classes for cut flowers were Messrs. B. C. SHEPHERD, J. COPP, Mrs. WEBBER INCLEDON, Rev. E. E. HEATHCOTE, Dr. SAMWAYS, Sir DUDLEY DUCKWORTH KING and Col. GUNDRY (gr. A. Shackelton). Colonel GUNDRY'S Sweet Peas were remarkably fine, being large and with long stems. Notable varieties in his exhibits were Bolton's Pink, Helen Lewis, John Ingman, Gladys Unwin, King Edward VII., Dorothy Eckford, and Lady Grisel Hamilton.

FRUIT.

For the President's Challenge Cup and special prize for a collection of six dishes of dessert fruits there was strong competition. The first prize was won by Sir DUDLEY DUCKWORTH KING, Wear House (gr. S. Baker); 2nd, H. ST. MAUR, Stover Park (gr. G. Richardson).

The premier collection contained White Muscat of Alexandria Grapes, Royal Jubilee Melon, Humboldt Nectarine, Hale's Early Peach, Brown Turkey Fig, and Williams' Bon Chrétien Pears.

The best three bunches of Muscat of Alexandria Grapes were also shown by Sir DUDLEY KING. He was also 1st for Black Alicante Grapes with three well-grown bunches.

For Madresfield Court and Black Hamburgh Grapes Messrs. B. C. SHEPHERD and H. ST. MAUR were 1st, respectively.

The best Peaches were displayed by J. H. LEY, Esq., Trehill (gr. J. S. Harding), he having beautiful fruits of Hale's Early.

Mr. B. C. SHEPHERD had the best Nectarines.

Mrs. KNIGHT-BRUCE, Exminster (gr. J. Way), had the best green, or white-fleshed Melon in a small but highly-flavoured fruit of Hero of Lockinge.

The premier dish of Pears of any variety was shown by Sir DUDLEY KING, the kind being Williams' Bon Chrétien, of superb quality and very beautiful in colour.

The 1st prize for dessert Apples went to Col. SANFORD.

For culinary Apples Mrs. C. HEARN and Rev. E. E. HEATHCOTE were equal 1st with Ecklinville Seedling and Lord Suffield respectively.

Rev. F. A. HAMILTON-GELL, Winslade (gr. G. T. Barnes), was 1st in a class for yellow Plums with Jefferson's Gage, and for purple or red Plums (not Gages) with Kirke's Seedling.

Mr. J. H. LEY had the best Morello Cherries, and Dr. SAMWAYS the best Red Currants.

VEGETABLES.

The prize for a collection which included Ailsa Craig Onions, Autumn Giant Cauliflower, Eclipse Tomato, Tender and True Parsnip, Best of All Runner Beans, Dobbie's Selected Red Celery, New Intermediate Carrot, Dobbie's Champion Leek, and Factor Potato was won by Mr. J. H. LEY, Trehill; 2nd, B. C. SHEPHERD, Esq. (gr. J. Stuckey.)

The Onions were exceptionally good, the 1st prize for these being taken by Sir DUDLEY KING; 2nd, T. KEKEWICH, Esq., Peamore (gr. J. Abraham).

Mr. T. KEKEWICH was 1st in a keen competition for Carrots, both in the class for Horn varieties, and the long or intermediate.

The 1st prize for Beet was awarded the Earl of PORTSMOUTH (gr. J. Vickery), who was also 1st for Kidney Potatos.

Sir DUDLEY KING was 1st for Tomatos with the variety Eclipse.

TRADE EXHIBITS.

Messrs. ROBERT VEITCH and SON, Exeter, exhibited their new Rehmannia "Pink Perfection," a fine collection of Gladioli, including Groff's Canadian Hybrids in the new blue shades, Dendromecon rigidum and other interesting new plants. Messrs. W. B. SMALE and SON, Torquay, showed their new Dahlia Jeanne Charmet, and a pretty, deep pink decorative Dahlia named Phyllis; Mr. W. J. Godfrey, Exmouth, staged a Cactus Dahlia of bright pink shade named Kremhilda, and a fine batch of Solanum Wendlandi. Messrs. JARMAN & Co., Chard, showed their new varieties of Sweet Sultan, also Dahlias, and Roses.

Other exhibits were shown by Messrs. J. WALTERS, Exeter; SAUNDERS & BISS, horticultural builders, and TUPLIN & SONS, Newton Abbot.

AGRICULTURAL, MARKET GARDENERS' & COTTAGERS' INDUSTRIAL SHOW.

AUGUST 21.—In the grounds of Norton Park, Bredon's Norton, near Tewkesbury (by the kind permission of Miss Woodhull), the Bredon's Norton and District Agricultural, Market Gardeners and Cottagers held their first horticultural show on the above date.

The gathering owed its success largely to the efforts of the hon. secretary, Miss Edith Bradley, who is already well known in the agricultural world, and more especially to women agriculturists, being a firm believer in the part which women can, and will take in its lighter branches, and that by starting a new movement in this particular district it would prove to throw open wider the door for women's employment, and stem the tide of those who would otherwise turn their backs to the land.

At two o'clock the Show was formally opened by Lord Coventry. Miss Bradley read a report in which she expressed a wish that the Show might become an annual one, and also the satisfaction it gave her to be able to announce that a woman had carried off the 1st prize for Cottage Gardens.

Lord Coventry said that for some time past he had wished to start a co-operative bank, on the lines of those already working in Italy, Switzerland, and Germany, but, for various reasons, amongst them the want of a good secretary, such a plan had so far been impossible. Then, speaking to the farmers, his Lordship said he should like to see more Corn grown in England, for if cut off from our grain imports, we should have but one month's supply in the country. If Parliament would give power to the various County Councils to buy stacks of Corn from the farmers, and keep the grain for national use, in case of war, this would, in some measure, prevent the great rise in the price of bread should war occur.

The entries for exhibits were over 375, one of the most interesting being models and plans for a single and pair of cottages, the price of the former to be £400, and of the latter £500 to £600, the prizes being given by Miss Woodhull, who intends to erect the building on her own estate, should the model meet with her approval. The cottage awards were not given at the Show. One, a beautiful little model of a single six-roomed cottage, inscribed "Pro Bono Publico," was charming, both in colour and design, with its quaint porch and long low windows.

Facing this exhibit was a stand of bottled fruit, exhibited by the Bredon's Norton School of Gardening. Asparagus, fresh and green as when cut in the garden, and many delectable fruits, were temptingly displayed.

The centre of the tent was given to Cottage exhibits, fruit and vegetables, seven entries for table decorations, and the "Mercia Antique Stall."

Demonstrations were given during the afternoon in: Fruit Bottling, by Miss May Crooke; Bee-Driving, by the Rev. E. Davenport, Worcester County Council; and Butter-Making and Milk Bottling, by Miss Jean Mason, N.D.D., of the Far Forest Dairy.

At 3.30 a parade of tradesmen's and market gardeners' turn-outs took place. A novel competitor was a woman market gardener, who was attractively attired in red coat and cap; she is well known in the neighbourhood. *A Daughter of Ceres.*

SCHEDULE RECEIVED.

WINCHESTER HORTICULTURAL SOCIETY'S autumn flower show, to be held on Tuesday & Wednesday, November 13, 14, in the Guildhall, Winchester.

GARDENERS' DEBATING SOCIETY.

CROYDON AND DISTRICT HORTICULTURAL.

—On Wednesday, the 15th inst. about 40 members and friends of the above society visited the famed gardens of Leonardslee, Horsham, the residence of Sir Edmund G. Loder, Bart. Many objects of interest in these gardens make up a collection rarely met with, and not only the plants, but the beautiful undulating landscape in its natural picturesqueness claims attention in every respect. Sir Edmund, whilst being a keen horticulturist, is also a zoologist of no mean repute, and his collection of animals from all parts of the world enhances the interest of the place. Mr. Cook, the gardener and an old member of the society, personally conducted the visitors through the gardens, and nothing was lacking on his part to make the visit enjoyable.

MARKETS.

COVENT GARDEN, August 29.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters, p. dz. bchs.	1 6	2 6	Mignonette, dozen bunches	2 0	3 0
Calla æthiopica, per dozen	2 6	4 0	Montbretia, dozen	2 0	3 0
Centaurea cyanus, doz. bunches	1 0	2 0	Odontoglossum crispum, per dozen blooms	2 6	3 0
— suaveolens	3 0	4 0	Pancratiums, doz. fls.	2 0	3 0
Coreopsis grandiflora, per doz. bunches	1 6	2 0	Pelargoniums, show, per doz. bunches	3 0	5 0
Carnations, per dozen blooms, best American varieties	1 6	3 0	— Zonal, double scarlet	3 0	4 0
— smaller, per doz. bunches	1 0	2 6	Poppies (Iceland), per dz. bnchs.	1 0	2 0
— Malmaisons	3 0	8 0	— Shirley	1 0	1 6
Cattleyas, per doz. blooms	9 0	12 0	Pyrethrums, dozen bunches	1 6	2 6
Chrysanthemums, per dz. blooms	1 6	2 6	Rhodanthe, per dz. bunches	2 0	3 0
Eucharis grandiflora, per doz. blooms	3 0	4 0	Roses, 12 blooms, Niphetos	1 0	2 0
Gardenias, per doz. blooms	1 6	2 0	— Bridesmaid	1 0	1 6
Gladiolus, various, per dz. bnchs.	9 0	12 0	— Kaiserin A. Victoria	1 0	2 0
— The Bride	3 0	4 0	— Caroline Testout	1 0	2 0
— Brenchleyensis, per doz. spikes	1 0	2 0	— C. Mermet	1 0	1 8
Gypsophila elegans, per doz. bunches	2 0	3 0	— General Jacqueminot	1 0	1 6
— paniculata	2 6	4 0	— in bunches, per dozen	2 0	4 0
Gaillardias	2 0	3 0	— Liberty	1 0	2 0
Lilium auratum	2 0	3 0	— Madame Chatenay	1 0	2 6
— candidum, per bunch	1 6	2 0	— Mrs. J. Laing	1 0	2 6
— lancifolium, rubrum and album	1 6	2 0	— from the open, various kinds, per dz. bnchs.	2 0	5 0
— tigrinum, per bunch	1 6	2 0	Scabiosa, per doz. bunches	2 0	3 0
— longiflorum	1 6	2 6	Statice, per dozen bunches	3 0	4 0
Lily of the Valley, p. dz. bunches	6 0	9 0	Stephanotis, per dozen trusses	3 0	5 0
— extra quality	9 0	12 0	Stocks (double white) per doz. bunches	2 0	4 0
Marguerites, white, p. dz. bunches	2 0	3 0	Sweet Peas, per doz. bunches	1 0	3 0
— yellow, per dz. bunches	2 0	3 0			

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asparagus plumosus, long trails, per doz.	5 0	10 0	Fern (French), doz. bunches	2 0	5 0
— — medium, bunch	1 6	2 0	Hardy foliage (various), per dozen bunches	2 0	3 0
— — short sprays per bunch	0 6	0 9	Hardy Grasses, per doz. bunches	2 0	3 0
— Sprengeri	0 6	1 0	Ivy-leaves, bronze	1 6	2 0
Adiantum cuneatum, doz. bun.	4 0	6 0	— long trails per bundle	1 0	2 0
Berberis, p. bunch	2 6	3 0	— short green, doz. bunches	2 0	3 0
Croton leaves, per bunch	1 0	1 6	Moss, per gross	4 0	5 0
Cycas leaves, each	1 6	2 0	Myrtle, per dozen bunches	2 0	5 0
Fern, English, p. dozen bunches	0 9	1 6	Smilax, p. dz. trails	2 0	5 0

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

	s.d.	s.d.		s.d.	s.d.
Ampelopsis Veitchi, per dozen	6 0	8 0	Coreopsis	4 0	6 0
Aralia Sieboldi, per dozen	4 0	6 0	Crotons, per dozen	12 0	30 0
— larger	9 0	12 0	Cyperus alternifolius, dozen	4 0	5 0
Araucaria excelsa, per dozen	12 0	30 0	— laxus, per doz	4 0	5 0
Aspidistras, green, per dozen	18 0	30 0	Dracænas, per doz.	9 0	21 0
— variegated, per dozen	30 0	42 0	Euonymus, per dozen	4 0	9 0
Asparagus plumosus nanus, doz.	6 0	9 0	Ferns, in thumbs, per 100	7 0	10 0
— Sprengeri, doz.	6 0	8 0	— in small and large 60's	16 0	25 0
— tenuissimus per dozen	8 0	10 0	— in 48's, per dozen	4 0	10 0
Asters, per dozen	3 0	6 0	— in 32's, per dozen	10 0	18 0
Begonias (tuberous), per dozen	4 0	5 0	Ficus elastica, per dozen	9 0	18 0
Bouvardias, per dozen	6 0	8 0	— repens, per doz.	4 0	6 0
Campanula isophylla alba, per dozen	4 0	6 0	Fuchsias, per doz.	4 0	6 0
— Mayi	4 0	6 0	Hydrangea Hortensia, per dozen	8 0	18 0
Chrysanthemums, best	12 0	24 0	— paniculata	6 0	18 0
— smaller	5 0	8 0	Kentia Belmoreana, per dozen	12 0	18 0
— segetum	3 0	6 0	— Forsteriana, per dozen	12 0	24 0
Clematis, per doz.	8 0	9 0	Latania borbonica, per dozen	12 0	18 0
— in flower	18 0	24 0	Lilium auratum	18 0	24 0
Cocos Weddelliana, per dozen	9 0	18 0	— longiflorum, per dozen	12 0	18 0
Coleus	3 0	5 0	— lancifolium, per dozen	18 0	24 0

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

	s.d.	s.d.
Lily of the Valley, per dozen ...	18 0	30 0
Marguerites, white, per dozen ...	4 0	8 0
Mignonette, per dozen	4 0	6 0
Pelargoniums (Zonals), per dozen	3 0	5 0
— Ivy-leaved, per dozen	5 0	8 0
Petunias, double, per doz. ...	3 0	4 0
— 48's	4 0	6 0
— single	3 0	4 0
Rhodanthe, per dz.	3 0	5 0
Roses, per dozen ..	12 0	18 0
Selaginella, dozen	4 0	6 0
Spiræa japonica, per dozen ...	6 0	10 0
Verbena Miss Willmott, per doz..	4 0	6 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (English), ½ sieve... ...	1 0	3 6
— English, p. bhl.	2 6	5 0
Apricots (French), per box ...	1 0	1 9
— ½ sieve... ...	10 0	—
Bananas, bunch:		
— No. 1 quality...	6 6	7 6
— No. 2 quality...	5 6	6 6
— Extra quality...	8 0	8 6
— Giants, per bunch	9 6	10 6
— Jamaica ...	4 6	6 0
— Loose, per dz.	0 8	1 3
Blackberries, peck	4 0	—
Currants (English), — black, ½ sieve...	7 6	8 6
— English pecks	3 0	3 6
— ½ sieve, Red ...	4 0	4 6
Damsons, ½ sieve	5 0	6 0
Figs, per dozen ...	1 0	3 0
Grapes (English), Black Hambro, per lb.	0 6	1 6
— Alicante ...	0 9	1 4
— Colmars ...	1 0	3 0
— English, Muscat, per lb. ...	1 0	2 0
Gooseberries (English), ½ sieve ...	2 0	3 0
Greengages (French), p.box	1 10	2 0
— French, ½ sieve	4 0	9 0
— ,, ¼ sieve	3 6	5 0
Lemons:		
— Messina, case	10 0	16 6
— Naples, p. case	18 0	23 0
Lychees, per box...	0 10	1 0
Melons, each ...	2 0	—
— Valencia, case	7 0	9 0
Nectarines, English	4 0	18 0
Nuts, Colnuts, per doz. lb... ...	5 0	6 0
— Brazils, new, per cwt. ...	45 0	—
— Spanish, p. bag	42 0	43 0
— Barcelona, per bag	24 6	—
— Monkey Nuts, per bag ...	18 0	—
— Walnuts, dried, cwt.	35 0	—
—Chestnuts, Italian, per bag ...	13 6	15 0
— Cocoa nuts, 100	10 6	13 6
Oranges, per case:		
— Murcia ...	16 0	18 0
Peaches (English), per dozen ...	3 0	18 0
— French, ½ sieve	5 6	6 6
— boxes	1 4	2 0
Pears (English), ½ sieve	3 0	5 0
— English, bushel	5 0	6 0
— French, Williams, boxes ...	2 6	3 0
— French, Williams, crates...	5 9	10 0
— Californian, pr. case	6 0	8 0
Pineapples, each ...	1 9	3 6
Plums (English), ½ sieve... ...	4 0	7 6
— French, box ...	0 8	1 3
— French, ½ sieve	3 0	6 0
— Californian, boxes	5 6	12 0
Raspberries, per putt.	0 4	0 6
— per peck ...	2 0	3 0

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Beans, Broad (English), per bush.	2 0	—
— Home grown, per lb	0 4	0 6
— Channel Island	0 3	0 4
Beetroot, bushel ...	0 10	1 0
Broccoli, sprouting, per bushel	1 6	1 9
per doz. ...	1 0	2 0
Cabbages, Spring, per bag ...	1 6	—
— red, per bushel	1 6	2 0
Carrot, French, pad — per bag, unwashed ...	2 0	2 6
— new, per dozen bunches ...	4 0	—
Cauliflowers, per tally	3 0	6 0
Chow Chow, p. dz.	1 6	2 0
Cucumbers, dozen	2 0	2 6
Endive, per dozen	1 8	2 0
Horseradish, foreign, per dozen bundles ...	18 0	20 0
Indian Corn, dozen	3 0	—
Leeks, 12 bundles	1 6	3 0
Lettuces, Cos, per dozen	2 0	—
Marrows, per doz.	3 0	4 0
— per tally ...	2 6	3 6
Mint, per dozen ...	2 0	3 0
Mushrooms (house) per lb	0 6	1 3
— Buttons, per lb.	0 9	1 3
Mustard and Cress, per dozen pun.	1 0	1 6
Onions (Valencia), case	6 0	6 6
— Egyptian, bags..	4 6	5 0
— pickling, per bushel... ...	3 6	4 0
— French, ½ bag	2 3	—
— Spring, dozen bunches ...	1 0	—
Parsley, 12 bunches	1 0	1 6
— bushel	2 6	—
Peas (English), per bushel	3 0	4 6
Potatos (new):— Lincoln, cwt ..	4 0	5 6
Spring, greens, per bushel	1 3	—
Salsafy, per dozen bundles ...	4 0	—
Tomatos:— — English, per 12 lbs.	2 6	3 0
— small, selected per 12 lbs. ...	1 9	2 3
— Seconds, per 12 lbs. ...	1 0	—
— French, per crate	2 6	3 6
Turnips, per doz. bunches ...	1 0	1 6
— bags	1 0	—
Turnip Tops, bush.	1 0	1 6
Watercress, per doz. bunches ..	0 6	—

REMARKS.—English Tomatos are still very plentiful and 3s. for 12 lbs. is the top price now obtainable. Nectarines are scarce. Peaches are a little dearer owing to less quantities arriving at the present time. Trade is steadily improving. *E. H. Rules, Covent Garden, Wednesday, August 22, 1906.*

POTATOS.

Lincolns, 60s. to 65s.; Bedfords, 60s.; Kents, 65s. to 70s.; Blacklands, 55s. to 60s. Trade is very dull. *John Bath, 32 and 34, Wellington Street, Covent Garden*

COVENT GARDEN FLOWER MARKET.

The market now presents only a very dull appearance. In flowering plants Chrysanthemums are the leading feature, and sell fairly well, besides the pot-plants, many of which are now very good, large quantities are taken up from the ground and sold in boxes for planting. Asters are also sent to market in the same condition and are useful for filling up spaces in the garden where annuals and other early flowers have passed away. Asters in pots realise very low unremunerative prices. There are still good zonal Pelargoniums, also a few Ivy-leaved sorts, but the "shows" and "regals" are now nearly finished for the season. Lilliums, of various sorts, and Campanulas are good from several growers, but there are also some very poor plants of Campanula. Double Zinnias, Coreopsis, and Verbenas are still satisfactory. White Marguerite are plentiful. Most of the Fern growers continue to keep their stands well filled with useful plants. It is remarkable that Palms are now cheaper in Covent Garden market than they were in Belgium. A pedistras still maintain their prices, but as these are now over plentiful in some nurseries they may not continue to do so. Cyperus alternifolius is in good condition now, but this plant is not such a favourite as formerly. Eulalia japonica variegata which was much in demand a few years ago cannot be sold easily.

CUT FLOWERS.

Trade continues to be very uncertain, and prices are very low. Lilium longiflorum has been down to 1s. per bunch, for good blooms, L. lancifolium album has sold at 6d. to 1s. per bunch, L. lancifolium melpomene and L. tigrinum are also good. Roses are now a little dearer, or, at least, some of them are, but it is difficult to quote prices. After the best have been selected the remainder have to be sold for what little they will fetch, and hawkers take them out in large baskets. Carnations do not sell much better; there are still a few fairly good "Malmaisons." and "American" or "tree" Carnations are almost as good now as they were early in the season. Sweet Peas are nearly finished for the season, they have been marketable since early in February. Lily of the Valley is over plentiful; Gardenias, Stephanotis, Tuberoses, Eucharis, &c., are all well supplied, and Gladioli, Gaillardias, Coreopsis, and other hardy flowers are over abundant. Asters, in distinct colours, are seen all round the market, but now there are fine blooms of Chrysanthemums, fewer Asters will be needed. The beautiful Chrysanthemum blooms now coming in would realise more money in October. *A. H., Covent Garden, Wednesday, Aug. 29, 1906.*

CATALOGUES RECEIVED.

B. S. WILLIAMS & SON, Victoria & Paradise Nurseries, Upper Holloway, London, N.—Bulbs.
TILLEY BROS., 133, London Road, Brighton—Bulbs.
WM. PAUL & SONS, Waltham Cross, Herts—Bulbs.
W. C. BULL, Ellington Road, Ramsgate—Bulbs.
ROBT. SYDENHAM, Tenby Street, Birmingham—Bulbs.
WILLS & SEGAR, Royal Exotic Nursery, South Kensington, London—Bulbs.
DAVID W. THOMSON, 113, George Street, Edinburgh—Bulbs.
J. MURRAY & SONS, 457, New Cross Road, Deptford—Bulbs.
CLARK BROTHERS & Co., 65, Scotch Street, Carlisle—Spring Flower Roots.
WILLIAM LAING, Sutton, Surrey—Bulbs.
DOBBIE & Co., Rothesay, N.B.—Bulbs.
JAMES CARTER & Co., High Holborn, London—Bulbs.
FRANK DICKS & Co., Deansgate, Manchester—Bulbs.
WM. BAYLOR HARTLAND & SONS, Ard-Cairn, Cork—Bulbs.
THOS. DAVIES & Co., Wavertree, Liverpool—Bulbs.
DOBIE & MASON, 22, Oak Street, Manchester—Bulbs.
R. C. NOTCUTT, Woodbridge—Bulbs.
J. BACKHOUSE & SON, LTD., York and Leeds—Bulbs.
AMOS PERRY, Winchmore Hill and Enfield, London, N.—Bulbs and Tubers, and new and rare hardy plants.

FOREIGN.

ANGLO-DUTCH NURSERY Co., Castricum, near Haarlem, Holland—Bulbs and flower roots.
W. SMEETS & SON, Boskoop Nurseries, near Delden, Holland—General Nursery Stock.
VILMORIN-ANDRIEUX & Cie, 4, Quai de la Mégisserie, Paris—Cereals, Forage Plants, Grasses, &c.

ENQUIRIES AND REPLIES.

RHUBARB.—Will any reader of the *Gardeners' Chronicle* please state their experience of the variety of Rhubarb known as Burbank's Winter Red? Does most of it persistently run to seed? *J. T., King's Norton.*

ANSWERS TO CORRESPONDENTS.

ARABIS DISEASED: *Fairmill.* The plants are attacked by white rust, Cystopus candidus. The disease has probably spread from some neighbouring cultivated plant or weed, as the fungus occurs on every plant belonging to the wallflower family. Infection only takes place during the seedling stage, hence if the seed bed is made in soil that is not infected there is no danger of the disease appearing again.

BOOKS: *T. C.* An account of Douglas' life was published many years ago in Sir William Hooker's *Companion to the Botanical Magazine.* It is hardly likely that you will be able to obtain that work, but a condensed account is given in the *Manual of Coniferæ* published by Messrs. James Veitch & Sons, King's Road, Chelsea. You might refer also to the recently issued work, *Portraits of Botanists.* Details of Drummond's career might also be found in Sir William Hooker's work already referred to. A very brief summary of the work of both the botanists mentioned is given in a *Biographical Index of British and Irish Botanists,* by Britten & Boulger, and published by West, Newman & Co.

BOUVARDIAS, &C., INJURED: *M. P.* The Bouvardias are injured by a fungus, Botrytis cinerea. This suggests that the plants have been grown in too damp an atmosphere. Spray, or better, immerse the affected shoots in a solution of water containing a wineglassful of formalin to the gallon. The Asplenium is injured by thrips.

DAHLIA FLOWER BUDS FAILING TO OPEN: *J. W. M.* We cannot assign any reason for the flowers not opening. There is no disease present to account for it.

HONEY DEW: *H. W.* There is no reason for supposing that the Honey Dew which drops from the leaves of Lime trees is due to any other cause than that of the agency of insects, the insect which is chiefly concerned in this matter being one of the Aphides Pterocallis tiliae, though it is possible in places that some other species is associated with it.

NAMES OF FRUITS: *G. H. W.* Apple Mr. Gladstone.—*Nectarine.* Peaches: 1, Sea Eagle; 2, Nectarine Peach; 3, Princess of Wales; 4, Not recognised. The Nectarines were over-ripe when packed and were in a state of pulp when received. You ask for a list of the best early and late varieties of Peaches and Nectarines. *Peaches.* Early: Duchess of Cornwall, Alexander, Amsden June, Hale's Early. Late: Golden Eagle, Lady Palmerston, Gladstone, Walburton Admirable. *Nectarines.* Early: Cardinal, Early Rivers, Lord Napier; Late, Victoria —good when grown under glass and of excellent flavour, green; Spenser, Newton. Pine Apple is also an excellent variety, but it is not so late in ripening as above. *Grape.* The best black variety for size and flavour is Madresfield Court.—*Interested.* 1, Stirling Castle; 2, Bismarck; 3, Belle de Pontoise; 4, Lady Sudeley; 5, Lady Lennox. Will correspondents sending fruits to be named kindly forward them when fully matured. It is difficult to identify Apples and Pears when they are little more than half-grown.

NAMES OF PLANTS: *D. E.* Leycesteria formosa. —*J. M.* Photinia serrulata.—*H. W.* Colutea arborescens, the Bladder Senna.—*D. M. L.* Weigela (Diervilla) rosea.—*Hortus.* 1, Sempervivum Lindleyi; 2, Cotyledon farinosa; 3, Cotyledon linguæfolia; 4, Mesembryanthemum polyanthum; 5, Iberis sp. probably sempervirens; 6, Lamium maculatum.—*B. L.* Withania coagulans.—*Rayner.* Certainly not Tarragon.—*Doubt.* 1, 2, 3 and 5, we are in doubt also, as well we may be from such specimens; 4, Sedum Ewersii; 6, Senecio maritima; 7, Epiphyllum truncatum; 8, Poinsettia pulcherrima; 9, Vallotta purpurea. Next time send better specimens, our time is precious.—*J. M.* Probably Campanula isophylla, but why trouble us with such a wretched scrap? It is not fair to us or our readers to whom our time is due, to do so.—*Zebra.* Statice sinuata.—*W. H. L.* Jasminum nudiflorum, so far as we can tell from the miserable scrap sent. If that is the plant, you can move it in the autumn. It is a most desirable winter-flowering plant.—*E. C. L.* 1, Cupressus, we cannot tell which one, but probably C. sempervirens; 2, Retinospora pisifera aurea, really a form of Cupressus; 3, Pseudotsuga Douglasi, once called taxifolia; 4, Abies concolor, 5, probably the Deodar, Cedrus Deodara.—*B. B., Dunstable.* Ruellia macrantha.—*A. M., Londonderry.* 1, Statice sinuata (yellow form); 2, Statice latifolia.—*J. K., Huddersfield.* Olearea Haastii.—*Pinehurst.* 1, Rhus cotinus; 2, Abies Pinsapo; 3, Thuya gigantea. Apple next week

PEAS INJURED: *A. B. C.* No fungus is present on the pods; we believe the rusty appearance is caused by thrips.

PLUM LEAF BLISTER: *B. H. B.* The injury is caused by the Pear leaf blister mite Phytoptus piri. It is now too late to do anything this season, but to prevent recurrence next year spray when the leaf-buds are opening with a mixture consisting of one ounce of soft soap and a wineglassful of paraffin thoroughly mixed in a gallon of rainwater.

THE NUNNERY GARDENS, ISLE OF MAN.—We take note of your letter.

TOMATOS: *A. B.* Tomato rust, Cladosporium fulvum Burn the affected plants and syringe the others with weak Bordeaux mixture.

COMMUNICATIONS RECEIVED.—D. P. & Sons—Hugh R. M.—W. W. Naunton (with thanks)—E. S.—J. M.—H. L. B.—H. J. M.—T. B. S.—A. C. J.—D. Roberts—T. E. A.—A. D. W.—L. G. R.—F. L.—Doubtful—F. C. S.—R. L. H.—W. H. C.—F. M.—J. C.—W. Gardner—J. Brown—Chloris—S. A.—J. O'B.—S. W. F.—W. M.—E. H. J.—W. B. H. The following communications have been received too late to be attended to in this week's issue.—Monteith.—A. S.—W. G. H., many thanks.—J. K. M., Millipedes not injurious, the cuttings are rotten.—R. F.—A. C. J.—P. M.—H. R. W.—Constant Reader—Milford.—W. G. S., Lymington—Pinchurst—J. D., Melon spot often figured and described.—A. W.—W. Bragg.

For Weather Reports see page xii.

THE
Gardeners' Chronicle
No. 1,028.—SATURDAY, September 8, 1906.

CONTENTS.

ILLUSTRATIONS.

THE FRENCH RIVIERA.

AN excursion to the French side of the Riviera, to Cannes and Antibes, where numerous old gardens are to be found, is always very interesting. The landscape differs greatly from that on the Italian side of the Riviera, east of the river Var. The Alpes Maritimes, which shelter the Italian Riviera as far as Nice, are directed northwards, and only lower mountains and hills follow the coast as far as Cannes. The west side of the Bay of Cannes is bordered by the picturesque Esterel Mountains. The coast along this strip of land is flat, and sand downs are more or less conspicuous. From the Var, as far as Antibes and Juan-les-Pins, these downs extend for a considerable tract inland, with much rough gravel, which offers only a sterile soil, on which short grasses form meagre meadows or woods of Pinus halepensis are growing. At Juan-les-Pins and the Croisette, as also along the west boundary of Cannes, the sand is of the usual fine quality. On these sandy downs Pinus Pinaster and the stone Pine, P. Pinea, grow in dense woods, and individual trees of great beauty are to be found.

Whilst the rocks of the Italian Riviera are Jurassic or of the older tertiary epoch and chiefly calcareous, the French side is, with some exceptions, a very old formation of Gneiss and Porphyry. These rocks have produced quite a different soil, rich in siliceous matter, which influences the vegetation and accounts principally for the successful cultivation of many plants. The winter temperature of that side of the Riviera is lower than it is east of the Var. The country is more exposed to north winds; nevertheless, many plants resist them as well or even better than they do at La Mortola. There is also more rain, and often we can see it raining there whilst we at La Mortola have a cloudless sky.

Cap d'Antibes is a long peninsula of calcareous rocks, reaching far out into the sea. The garden of the Villa Thuret, a botanical garden presented to the State by the widow of M. Thuret, is situated in a very sheltered spot. Professor Poirault, who succeeded M. Charles Naudin, has greatly increased the already large collection of plants. This garden is very rich in remarkable trees, and especially in Eucalyptus. There is a specimen of Jubæa spectabilis, certainly the oldest and tallest on the whole coast. Its stem is about seven metres high and 4.75m. in circumference at the bottom about 10 c. m. above the soil. One of the oldest Pritchardias I measured was 3m. in circumference. There are several fine old Cedars and some beautiful specimens of Araucaria Bidwillii. The collection of evergreen trees and shrubs is extremely rich; many botanical rarities and many very decorative species deserve mention, did space permit. Large Yucca filifera and Yucca Mazelii have been frequently photographed. There is also a collection of succulent plants, and one of bulbs and perennials. A big specimen of Opuntia tomentosa deserves special notice. It is the biggest to be found on the Riviera. The propagating beds and the new plantations contain many novelties of high interest. Everywhere it may be seen how anxious the director, Prof. Poirault, and his head gardener, Mons. Texier, are to improve this scientific garden. A visit to it is always instructive and pleasant. I found many interesting plants in flower, and gathered a rich harvest for our herbarium.

This time, however, my visit to the French Riviera took place when there were signs of rain and thunder. On July 4 and 5 heavy thunderstorms brought an enormous quantity of rain, at Marseilles 87mm., at La Mortola 70m. were measured. The storm of July 5 did great damage at Cannes and further west. At Cannes the storm was terrific. The streets were under water and covered with Platanus leaves, windows were broken, and the ships and boats lying in the port were damaged. In the gardens and along the road the trees were sadly damaged, big Eucalypti were blown down, and the telegraph and telephone wires destroyed. The railway line was also damaged, and the train and tram services were interrupted for some time. I was thus prevented from visiting some of the many fine gardens of Cannes. Many or most of them are kept up at considerable expense. The plants seem to enjoy the soil, the more so as there is no stint of manure nor of water. I saw one fine villa garden in the centre of the town which well deserves a visit. It is a typical Riviera garden in its most elaborate and expensive style. A garden of this sort is a modern form of the Rococo style, "Nature in bonds." It is sure to be found where profound knowledge and love of nature and plants are not the motive of keeping up a garden. It contains, nevertheless, many fine plants, and during the season it is sure to be admired. The magnificent Palms, groups of Bamboos, and many fine trees are striking features.

On my return to Golfe Juan I had occasion to admire quite a different style of garden. It is situated along the rocky shore between the sea and the railway on a very narrow strip of land, about one kilometre long. This garden is kept as a wild garden. Large Pines, Heaths, Cistuses, Calycotome, etc., form a dense "macchia," mixed with such exotic plants as Lotus peliorhynchus, Chorizemas, Melaleuca, etc. The whole has a charming effect. What a difference between such a garden and that at Cannes! In two places where the land is broader there is a small orchard and flower garden. In the former they cultivate a kind of Citrus (Citron gallé) from Mauritius, Anona Cherimolia was in flower, and even such delicate plants as Pandanus utilis and Piment officinalis grow well in the open.

All along the road leading from Cannes to Golfe Juan fine gardens and horticultural establishments succeed each other. Many of these gardens, however, seem sadly neglected, an eloquent proof of the decreasing interest in horticulture, which, according to a friend of mine, is due to the increasing "motoromanie." I was agreeably surprised to find in one of these gardens some fine and rare plants. Acacia vestita, of which there were several good specimens, and a single Acacia linifolia. These Acacias grow far better on this siliceous soil than on our limestone. Of the rare Hakea Victoriæ there were two old specimens, which seem to have flowered and fruited abundantly. A tall specimen of Dammara australis with a straight stem, measuring 20m. in height and 1.40m. in circumference at the base, stood isolated. The storm had broken some big branches, so I was able to collect some herbarium specimens with male flowers. I tried to impress upon the gardener the value of these rare plants and that he ought to propagate them, but if the owner of the garden shows no interest, how can his gardener be expected to do otherwise?

But, most of all, the dense Palm woods of two gardens at Golfe Juan attracted my attention. It is a pity that they have been turned by their owners into a kind of horticultural establishment. Still, much of their beauty remains. The originator of these gardens planted a tropical, or rather subtropical forest, which even now, after so many fine trees have been removed and sold, still produces an imposing effect. Tall Cocos Romanzoffiana, with their high, smooth stems, and Pritchardias form lofty columns, above which the dense green roof of the foliage hides the sky, and in the shade of which tender tree Ferns are spreading their large fronds. Many other Palms and interesting evergreen trees and shrubs, large Eucalypti, Dammara, Podocarpus, Ocotea foetens, Acacias, Banksias, etc., frame this model of a subtropical forest. We have nothing similar on this side of the Riviera, even the dense plantations of Phœnix dactylifera at Bordighera are by no means so imposing and elegant. *Alwin Berger, La Mortola, Ventimiglia, Italy.*

GUEVINA AVELLANA.

THIS evergreen tree, known also as the Chilian Nut [and as Gevuina Avellana in *Index Kewensis*], was introduced into this country and distributed by Mr Bull, who describes it as "an evergreen growing in its native country, Chili, to the height of 30 feet, and furnished with coriaceous, impari-pinnate leaves, consisting of from two to five pairs of ovate-dentate leaflets. The flowers are in simple, erect racemes, 2 inches to 4 inches in length, succeeded by globose, edible drupes enclosing almond-like seeds, which are eaten in Chili and Peru. The latter have a mild and somewhat oily taste, while the fleshy pericarp is made

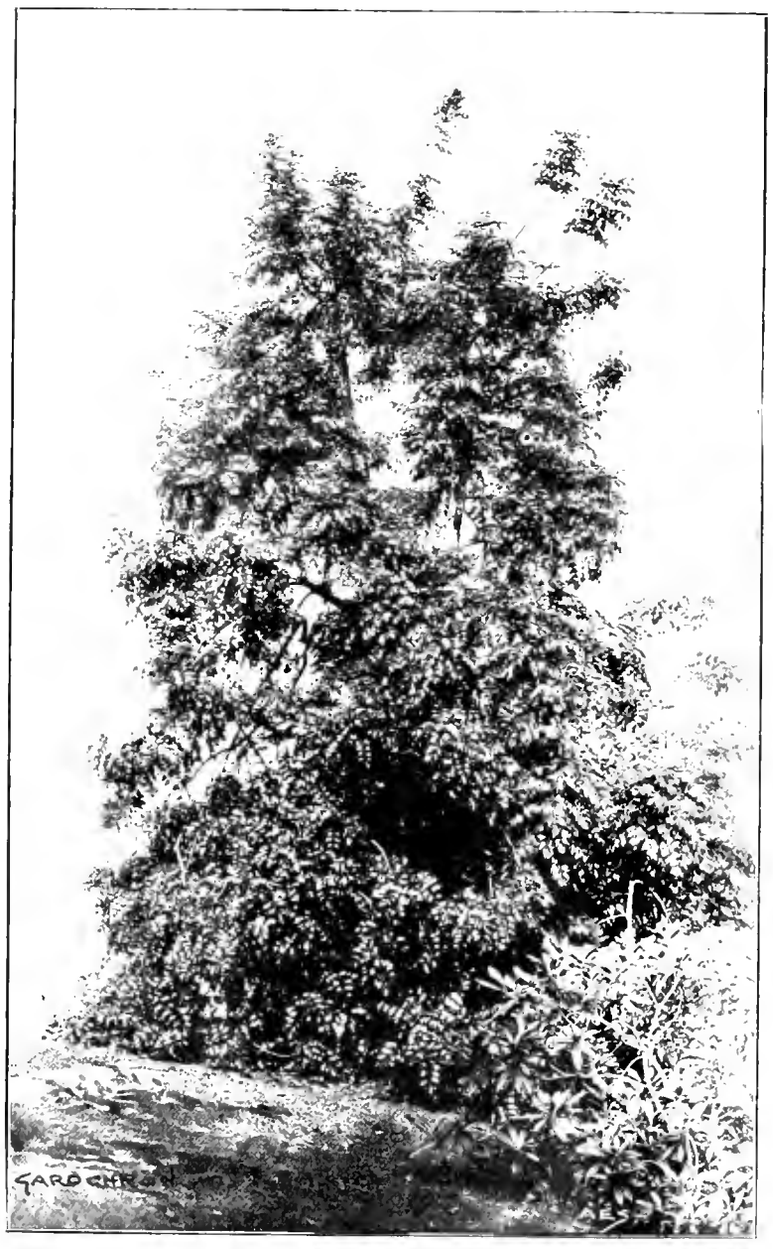


FIG. 70.—GUEVINA AVELLANA AS GROWING AT GREENWAY, DEVONSHIRE. HEIGHT 23 FEET, SPREAD OF BRANCHES 20 FEET.

a substitute for the Pomegranate. It belongs to the tribe Grevilliæ, of the natural order Proteaceæ, and has proved itself quite hardy in Devonshire, though whether it is so in any of the less favoured parts of the country we are unable to say. Anyway it is a very handsome shrub." The specimen here figured, presumably the largest in the United Kingdom, is growing at Greenway, on the banks of the Dart, the property of Mr. T. B. Bolitho. It is 23 feet in height, and at the base has a spread of 20 feet. Its age is unknown, but an old man who has worked on the estate for 42 years states that it was 10 feet or 12 feet high when he first came, so that its growth is evidently slow in the later stages. In the same garden are two other examples, one about 16 feet in height, much crowded by Rhododendrons, and another healthy plant 4 feet in height raised from a layer. In Mr. Bolitho's garden at Trewidden, Penzance, an account of which appeared in these pages a few weeks ago, is another specimen 10 feet in height, also raised from a layer, and in the same gardens are three seedlings a few inches in height. In August the flower-racemes are produced, these being 4 inches in length and holding about two dozen small ivory-white blossoms with narrow recurving petals and stamens protruding half-an-inch. These are followed by fruits about the size of marbles, at first green, then red and eventually purple. It is a very rare plant, and I know of none in the south-west except such as have been propagated by layers obtained from the plant now illustrated. As regards Mr. Bull's statement that it is quite hardy in South Devon, I may say that this spring I saw a young plant in a certain Cornish garden that had died during the winter. At Kew, growing against the wall of the herbaceous garden, is a plant labelled Guevina Avellana absolutely unlike the Greenway specimen, having entire leaves 4 inches in length and 3 inches across in place of the much-divided foliage, which is apparent even in seedlings.—*W. Fitzherbert.*

THE LILY SEASON IN SCOTLAND.

IN south-western Scotland Lilies of every description seem to have been uncommonly successful this year, the moist season manifestly suiting their requirements much better than it has suited the capricious and somewhat too susceptible Rose. I have recently had the privilege of visiting several of the finest gardens in Wigtownshire, notably those at Monreith, the exquisitely-situated residence of Sir Herbert Maxwell, a sympathetic cultivator of the finest and rarest hardy flowers and flowering trees; Dunragit, long the property of Admiral Sir John Hay, whose gardens, under the fostering care of Mrs. Cunninghame and her head gardener, Mr. Bryden, are even more attractive than they were in the Admiral's earlier days; and Castle Kennedy, famous for the spacious grounds and gardens of the Earl of Stair, which, when under the guidance of his accomplished superintendent, Mr. Cruden, I visited on a memorably bright and peaceful evening last week, were, with all their lakes and terraces and glorious coniferous trees, supremely fascinating. To visit, under serene atmospheric conditions, such a splendid collection and scenic combination as this is an education in itself, for Castle Kennedy is a veritable epitome of the flora and forestry of the world.

In all of those distinguished horticultural centres, as also at Logan House in this picturesque parish, Oriental Lilies are cultivated extensively, and with gratifying results. Sir Herbert Maxwell has always imposing specimens of Lilium giganteum in the charming shrubberies environing his brilliant flower gardens, while at Dunragit House and Castle Kennedy (as formerly at Logan) the stately and majestic Lilium auratum platyphyllum almost invariably flowers grandly, and reaches an imposing height. Last year I parted with an enormous bulb of Lilium giganteum, the great Himalayan Lily, because, after growing it patiently for at least four years from an offset, it failed to bloom. I gave it to my near neighbour, Mr. John Hill, mechanic and earnest amateur horticulturist, with whom, I am glad to say, it flowered superbly this season, adorning, with its long, funnel-shaped, ivory white, and intensely fragrant blooms, a conspicuous border in his beautiful, miniature garden, where it was the admiration of all beholders.

Lilies, in my opinion, are very conservative, and object to transplantation, unless when accompanied, as in this special instance, by an adhering portion of soil; but Lilium giganteum, doubtless in virtue of its marvellous vitality, appears to be an exception to the general rule. Plant-life, like our own mysterious physical nature, is sometimes benefited by an entire change. The Lilies that have succeeded best in my garden this year are Lilium monadelphum, var. Szovitsianum, a native of Mount Caucasus and Persia, which reached a height of nearly 9 feet, and flowered magnificently; the Siberian L. davuricum, var. incomparabile, a very dark-hued and effective variety; the satiny-white and richly fragrant Madonna Lily—Lilium candidum—which in some gardens I could mention has been almost ruined by an insidious disease; Lilium pardalinum, and its more vigorous and prolific derivative, Lilium Burbanki, which resembles it much too closely to be perfectly distinct; and Lilium chalcedonicum, the lustrous "Scarlet Martagon." Lilium auratum is exceedingly promising, but it is considerably later in unfolding its Oriental splendours here than on the sunny terraces at Lochinch Castle.

Lilium speciosum, one of the loveliest and most refinedly fragrant of all Eastern Lilies, invariably flowers impressively here, the only exception being the variety of comparatively

recent introduction entitled "magnificum," which, if my own experience of its characteristics is any criterion, seems to be lacking in vitality and floral capability. I cannot doubt however, that when more strongly established it will, like its predecessors, greatly improve.

The various fascinating forms of Lilium longiflorum are usually adequately successful the first season, but they are not enduring. There is, ere long, too great a multiplication of minute and utterly impotent bulbs, and rapid deterioration is the inevitable and lamentable result. *David R. Williamson, Wigtownshire, August 28.*

MODERN BOTANY.

The following extracts are taken from Prof. F. W. Oliver's address to the Botanical Section of the British Association at its York meeting, not to mention others, were continually bringing these results before societies, writing about them in the journals, and translating books. But the thing never caught on—it would have been surprising if it had. You may write and talk to your contemporaries to your heart's content, and leave no lasting impression. The schools were not ready. No movement of the sort could take root without the means of enlisting the sympathies of the rising generation. It was only in the 'seventies that effective steps were taken to place botany on the higher platform; and the service rendered in this connection by Thiselton Dyer and Vines is within the knowledge of us all. Like the former in London, so the latter at Cambridge aroused great enthusiasm by his admirable courses of lectures. Great service, too, was rendered by the Clarendon Press, which diffused excellent translations of the best Continental text-books—a policy which it still pursues with unabated vigour, though the need of them is, I hope, less urgent now than formerly. Already at the time of the last meeting in York (1881) a select band of Englishmen were at work upon original investigations of the modern kind. The individuals who formed this little group of pioneers in their turn influenced their pupils, and so the movement spread and grew. It would be premature to enter fully into this phase of the movement, so I will pass on with the remark that modern botany was singularly fortunate in its early exponents.

"Whenever the history of botany in England comes to be written, one very important event will have to be chronicled. This is the foundation of the Jodrell Laboratory at Kew, which dates from the year 1876. Hidden away in a corner of the Gardens this unpretentious appendage of the Kew establishment has played a leading part in the work of the last twenty-five years. Here you were free to pursue your investigations with the whole resources of the Gardens at your command. I suppose there is hardly a botanist in the country who has not at some time or other availed himself of these facilities, and who does not cherish the happiest memories of the time he may have spent there. Certainly Jodrell displayed rare sagacity in his benefactions, which included, in addition to the laboratory that bears his name, the endowments of the Chairs of Animal Physiology and Zoology at University College, London.

"Sir William Thiselton Dyer, who has so recently retired from the Directorship of Kew, had every means of knowing that his happy inspiration of founding a laboratory at Kew was a most fertile one. It would not be surprising if the future were to show that of the many changes inaugurated during his period of service this departure should prove by far the most fruitful.

"Another incident belonging to the early days ought not to be overlooked. I refer to the notable concourse of Continental and American botanists at the Manchester meeting of the British Association in 1877. The genuine interest which they evinced in our budding efforts and the friendly encouragement extended to us on that occasion certainly left an abiding impression and cheered us on our way.

"We are not forgetful of our obligations. We regard them in the light of a sort of funded debt on which it is at once a pleasure and a duty to pay interest. The dividends, I believe, are steadily increasing—a happy result which I am confident will be maintained.

"But I should be lacking in my duty if I permit the impression to remain that botany is anything but a sturdy and natural growth among us. The awakening, no doubt, came late, and at first we were influenced from without in the subject-matter of our investigations. But many lines of work have gradually opened out, whilst fruitful new departures and important advances have not been wanting. We still lean a little heavily on the morphological side, and our most

FIG. 71.—SINGLE GROWTH OF GUEVINA AVELLANA.
(For text see page 174.)

unfortunately held concurrently with the Hybridisation Conference in London.—

"The period of twenty-five years that has elapsed since the British Association last met in this city all but includes the rise of modern botany in this country. During the middle decades of last century our botanists were preoccupied with arranging and describing the countless collections of new plants that poured in from every quarter of an expanding empire. The methods inculcated by Linnæus and the other great taxonomists of the eighteenth century had taken deep root with us and choked out all other influences. Schleiden's 'Principles of Botany,' which marked a great awakening elsewhere, failed to arouse us. The greats results of Von Mohl, Hofmeister, Nageli, and so many other notable workers, which practically transformed botany, were at first without visible effect.

"It was not that we were lacking in men capable of appreciating the newer work. Henfrey, Dr. Lankester (the father of our president),

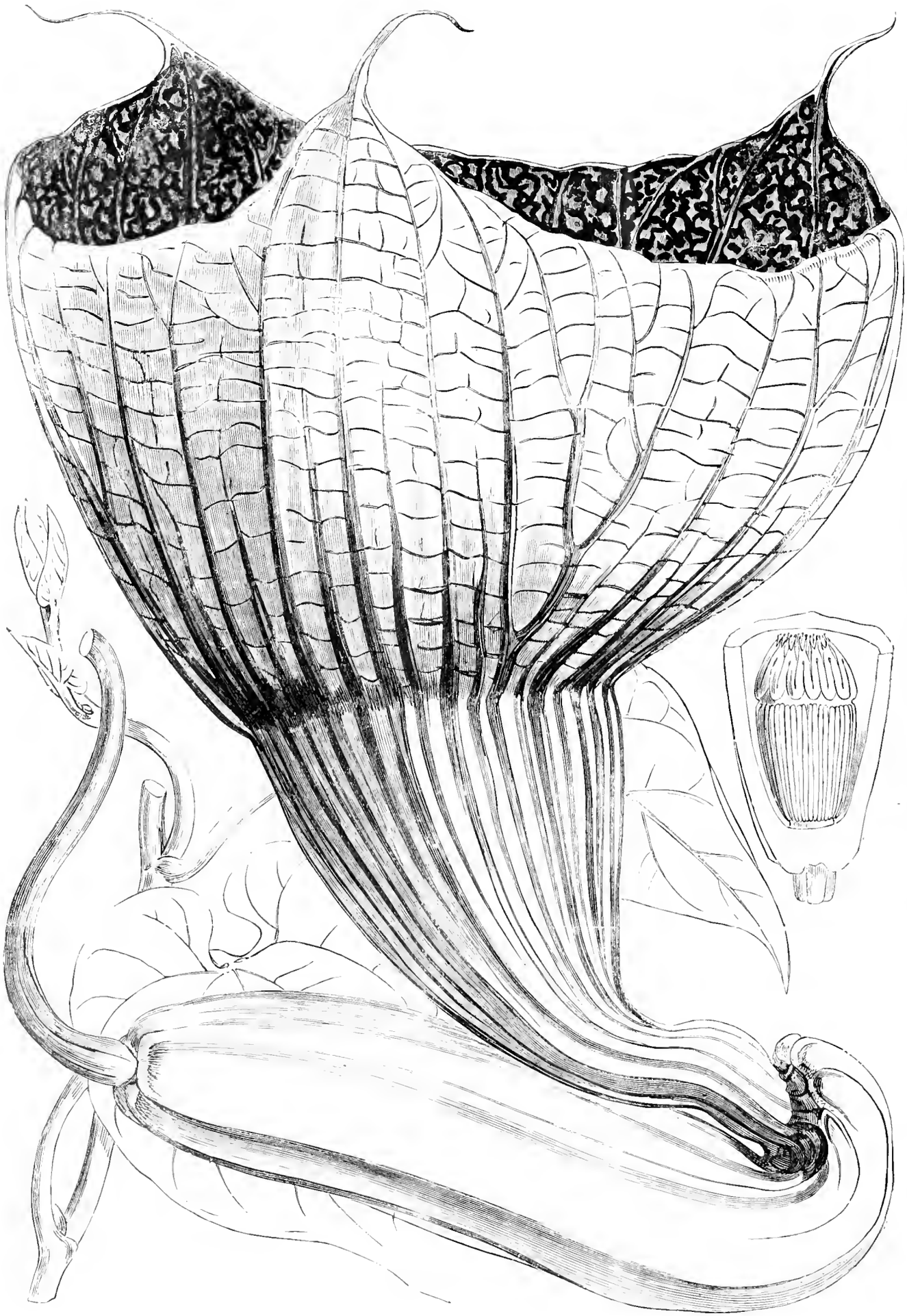


FIG. 72.—ARISTOLOCHIA GOLDIEANA WHICH FLOWERED LAST MONTH IN THE LIVERPOOL BOTANIC GARDEN. (REDUCED ONE HALF.)

For text see page 177.)

urgent need lies in the direction of physiology. As chemists and physicists realise more fully the possibilities of the 'botanical hinterland,' one may expect the conventional frontier to become obliterated. As Mr. F. F. Blackman has pointed out in a recent interesting contribution,* the chemist's point of view has undergone a change with the growth of the science of physical chemistry, and is now much more in line with that of the biologist than was formerly the case. This natural passage from the problems of the one to those of the other should be the means of attracting into our body recruits possessing the necessary chemical equipment to attack physiological problems.

"As the position gains strength on the physiological side, it will become possible to render more effective service to agriculture and other branches of economic botany.

"This is of importance for a variety of reasons. Among others it will bring public support and recognition, which will be all for the good, and it will provide an outlet for our students. It will also afford unrivalled opportunities for experiments on the large scale. Even should economic conditions, which compel us to import every vegetable product, continue to prevail in this country, this will not be so in the Colonies. As time goes on, one may reasonably expect an increasing demand for trained botanists, ready to turn their hands to a great variety of economic problems.

"From this rough sketch we see that the prevailing school of botany has arisen very independently of that which preceded it. The distinction—their efficiency probably has never been greater than at the present time. But the effort involved in their construction and upkeep is altogether disproportionate to any service to which they are put. Work, of course, comes out of them; it is no question of the devotion or ability of individuals. It is the general position, the isolation of systematic botany, to which attention should be directed with a view to its alleviation.

"If things are left to take their course there is the fear of atrophy through disuse. The operation of the ordinary economic laws will no doubt serve to fill vacancies on the staff as they arise, but the best men will be reluctant to enter. Of course, the pendulum may begin to swing the other way, though no indication of such a change is yet apparent."

(To be continued.)

* 'Incipient Vitality,' *New Phyt. Cont.*, v. i. v., p. 22.

FIG. 73.—SALVIA DICHROA: FLOWERS LAVENDER-COLOURED, AND WHITE.

ARISTOLOCHIA GOLDIEANA.

THIS remarkable species was flowering in the stove in the Liverpool Botanic Gardens on August 10. It is a native of Old Calabar, West Africa, where it was discovered by Mr. Thompson in 1864, and it flowered in the Glasgow Botanic Garden in July, 1867. The species has blossomed several times in this country, but only on very rare occasions. It flowered in the Royal Gardens, Kew, in April, 1891, but since that date it has failed to develop a single blossom in those gardens. A. Goldieana differs from all other members of the genus in its method of flowering, which is on the young growth and when it is only a few inches in length. The annual growths are produced from a swollen, woody rootstock. The development of the shoot is arrested until the flower fades, after which it rapidly elongates, making a growth 4 to 6 inches in length, which bears large cordate-acuminate leaves. The flower is borne on a stout pedicel some 6 inches in length: it is of a brown-red colour mottled with yellow. The distended throat is streaked with both lighter red and cream-white lines. In form the flower is somewhat triangular and has a diameter of nearly a foot. Measured from the pedicel to the tip of the bloom our flower was 1 foot 7 inches. A. Goldieana is figured in the *Bot. Mag.*, t. 5,672, and was described in the *Gardeners' Chronicle* as far back as November 9, 1867, p. 1,143.

One very curious fact in connection with this species is that it produces flower-buds almost every year, yet rarely do they mature. It is usually a battle for supremacy between the growth and the bud, generally the growth is victorious and the bud withers and falls. Our plant that flowered was kept quite dry at the roots until after the growth had commenced, when the apex of the shoot immediately above a bud was removed and all laterals were pinched out. After the flower-bud was swollen and of a reddish-brown colour the plant was thoroughly watered and afterwards kept fairly moist until the flower was fully developed, which in the present instance took five weeks. The last time this plant flowered at Liverpool was 14 years ago. *W. H., Liverpool Botanic Gardens.*

SALVIA DICHROA.

THIS noble Salvia is evidently very rare in cultivation, since, although it is stated in Nicholson's *Dictionary of Gardening* to have been introduced in 1871, no mention of it is to be found in the volumes of the horticultural Press for the past 25 years that I have searched. The plant was originally given me by Lord Walsingham under the name of Salvia tingitana, but, upon his submitting a flower spike and foliage to the authorities at Kew, they decided that its correct name was S. dichroa. Nicholson gives its height as from 2 feet to 3 feet, but the plant portrayed in the illustration (fig. 73) this year attained a height of 9 feet 6 inches, with a spread of 6 feet at the base. The flower-spikes are about 3 feet in length, and some 9 inches of the spike is covered with open flowers at the same time, but as the lower blossoms fade the upper ones expand, so that the blooming period is prolonged. The leaves are about 1 foot in length and the same in breadth, and are very deeply cut, being corrugated and covered with hairs on the lower side. A large plant bearing hundreds of flower-spikes is a grand sight when in full bloom, and in July is quite the glory of the garden. The individual flowers are of lavender-purple shade, the middle lobe of the lip being white. On a flower-spike recently cut there were 48 expanded and partially expanded blooms, while the total number of flowers borne on the spike was 175. Salvia dichroa is a native of the Atlas Mountains in North Africa, and the plant is therefore,

possibly, of doubtful hardiness, but in South Devon has never been harmed during the winter even though totally unprotected. Towards the end of August the leaves and stems wither and die, the plants throwing up new growth in the autumn. I am under the impression that this Salvia is not yet in commerce. *S. W. Fitzherbert, South Devon.*

NOTICES OF BOOKS.

JUGENDFORMEN UND BLÜTHENREIFE IM PFLANZENREICH: Juvenile Forms and Flowering Age in the Vegetable Kingdom. By Dr. L. Diels, private tutor in the University, Berlin. Published by Gebruder Bornträger, Dessauerstraase, 11, Berlin, S.W.

The not uncommon instances met with in the Old World and in Australia of the early flowering and dwarfed growth in trees and other kinds of vegetation, whilst in the same locality, and under different conditions of soil, exposure, water supply, &c., the same species may be observed reaching their fullest development, and flowering and fruiting when only of mature age, have afforded the author much matter for speculation as to the causes of these abnormalities, but without arriving at any satisfactory conclusions. He had ample opportunity of noting such occurrences during a lengthened sojourn in the western and other parts of Australia. The Flora of that continent is famous for the large number of its species, and the constant exchange of the factors which have an influence in altering the forms of the vegetation, and the alterations present themselves in sharply-defined features.

Instances of the relation of growth to reproductive maturity, and of youthful forms combined with ability to produce flowers and seeds, are everywhere met with. Since his return to Europe the author has looked up the literature of the subject and collected facts, the latter forming a far-reaching collection and throwing a new light on the manifold variations in plants. The author does not make any attempt to give a complete presentment of these cases, but merely takes typical examples of the many-sidedness observed, treating them briefly or otherwise, according to the nature and value of the object, and omitting all mention of matters of doubtful significance.

The development of a plant from the germination of the seed onwards runs through many phases that show themselves in the varied forms of the different organs. The final phase of this vegetative activity being the formation of the spore or seed, maturity is indissolubly dependent on vegetative development, and the end, which is due to "internal causes," the plant is bound to reach. Until quite recent times these views were unquestioned, and are those generally held, especially in the case of flowering plants. These views are now the subject of much discussion, and it has become necessary to obtain a clearer knowledge of all that is known or can be known about the formation of the floral organs. A tolerably complete picture of the more important points is afforded by Moebius in his "Baitragen zur Lehre von der Fortpflanzen der Gewachse," Jena 1897, see pp. 78-134.

Dr. Diels takes account of the action of sunlight, climate, aerial moisture, dryness of the soil, lack of plant nutriment in the last-named; and a list of plants is given which suffer through lack of favouring conditions. One striking example given is Abies excelsa, which usually flowers in its 30th-40th year; but on hungry soil came to flowering age in its 15th year, and setting its seeds abundantly in its 50th year. This is an instance of dryness of the soil producing abnormally early maturity, poverty of the soil having a similar effect. Temperature has great influence in the same direction, cold directly and indirectly through lessening the amount of available nutriment and moisture in the soil. A number of instances are given of the early flowering of Coniferæ, Bamboos, Palms, Quercus, Roses, Ailanthus, Rhus cotinus, Banksia, and Eucalyptus, which flower early or late, accordingly as the soil and other conditions are unfavourable or otherwise. Leptospermum ellipticum was named, which commonly grows to 2 yards in height, but which on bare soil only reached from 6-8 inches; and Eucalyptus marginata, the most important timber tree of West Australia, which does not succeed if the rainfall is less than .75c.m. annually. But there are exceptions. On the Stirling range of mountains there were found by Dr. Pritzell trees of 90 feet in height, and also shrubby forms of the same species (E. occidentalis) scarcely 3 feet in height.

The author's researches were not confined to the plants of Australia, but extended to water and swamp species of Europe, of especial interest being his remarks and those of Glück in his "Untersuchungen uber Wasser und Sumpf Gerwächse." A list of European plants is given which flower early under certain natural conditions, such as scanty nutrition, the shortening of the growth period, and exposure to strong light.

From such causes arise the lowly forms of Ranunculus pygmæus in the neighbourhood of the snow line—real examples of "Hunger forms." And similarly the formation of spores in Marsilia and Bidens.

Changes in the forms of leaves of Hakea, Pittosporum, Banksia, and in fronds of Ferns, &c., are noted. The author's conclusions are that arrested vegetative growth will not account for all the alterations that occur in the form and flowering age of plants; and that the reproductive stage is not inseparably connected with any certain stage of vegetative development. There is a certain minimum in the life of a plant which must be reached, and that exceeded, there is a wide zone for variation of the flowering stage. Heterogenetic influences are brought to bear in some instances; variations, exogenic in great part with cryptogams as with flowering plants; but of these we know but little.

Although the instances of early flowering, &c., are of interest from the great variety of plants observed in many parts of the world, these do not seem to add much to our knowledge. The effects of occasional drought and constant dryness in the soil; a restricted area from which the roots can draw nutriment; lack of plant food; crowded state of a plantation of trees or other plants are matters well known to gardeners and foresters, and this knowledge is sometimes acted upon from intent. We all know what occurs when a young Pine-apple plant is allowed to get pot-bound in a small pot; when a fruit tree's roots are brought up from a rich sub-soil and planted shallow; or by working a variety on a dwarfing stock and thus restricting the feeding area of the root system of the plant; when seeds of Broad Beans are sown on poor land; also pickling Onions; when Willows for basket-making are planted on dry soil; when Melons are planted on thin beds of soil.

The gradual dwarfing of vegetation as we approach the poles, or the summit of high mountains, is another well-known fact. The effect of exposure to strong winds can be seen at most seaside places and on hill-sides. Remove, however, the causes of abnormality, and there is a return to larger and longer continued growth and a retarded maturity, and, as a consequence, flowering likewise.

The Week's Work.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Chrysanthemums which are being grown for the production of large blooms for exhibition or home decoration will now have reached an important stage, and encouragement should be given them by top-dressing for the purpose of increasing root action, and also by applying stimulants afterwards. For top-dressing purposes a mixture of two parts loam to one pound of animal manure is at all times a safe mixture. If clear soot-water be applied about twice each week it will soon improve the colour of the foliage of pale-looking plants, and an occasional syringing of the foliage with soot-water, if perfectly clear, will prove beneficial in keeping the plants free from red spider. Sheep droppings gathered fresh from the fields is of great value, and a stimulating liquid may be prepared from such manure by placing it in a bag to prevent it mixing with the water, which otherwise would form into a thick liquid; and if applied to the plants in this form it would leave a sediment on the top of the soil and thereby seal up the air and close the water passages. The bag should be moved about in the water each day and the virtues of the manure will be abstracted. A word of caution is necessary, even, in the matter of applying stimulants to Chrysanthemums, for although moisture-loving subjects and gross feeders, they suffer from any stagnation, or more moisture at the roots than can be assimilated. The perfectly safe practice is to apply liquid stimulants in a weak state at frequent intervals, and changing occasionally the kind of plant food applied will prove beneficial. The degree of constitutional vigour in each plant will be a guide to observant cultivators how to administer stimulants successfully. Should the present hot weather continue, plants with their buds just set should be very slightly sprayed over towards the evening.

General Remarks.—Thin out the superfluous growths of stove and greenhouse climbers. Decrease the amount of shading used as much as possible, so that the plants will mature and ripen their wood; this especially applies to Allamandas, Bougainvilleas, Dipladenias, Ixoras, and other stove and greenhouse plants which need this timely thinning out to ensure their successful flowering. Admit air freely during the day and leave the roof ventilators open a little during the night; reduce slightly the atmospheric moisture in these structures. Poinsettias in pits or frames will better mature their growths if the pit-lights are removed entirely for two or three hours during the hottest part of the day. Let Cyclamens, Primulas, and Cinerarias be fully exposed to the night dews by removing the lights in the evening.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Strawberries.—Plants that were put into the final pots early will now be growing freely. Place the plants thinly, giving each plenty of room so that they will be the better exposed to the rays of the sun. Those growing in 5-inch pots should be given weak doses of liquid-manure about twice each week. One of the most important items is to get the crowns well matured before the days become very short, and therefore stimulants must not be applied in excess or sappy growths will be the result. Pot up late runners at once, putting them in the shade for a few days until they take hold of the new soil. Remove runners from these young plants as soon as they appear and keep the pots free from weeds. Syringe the plants with water after the sun has gone down in the afternoon. The plants should be kept to one crown, removing any small ones as they form.

Tomatos are usually required through all the seasons of the year, therefore get a house in readiness for the reception of plants now growing in pots out of doors, and which must be removed indoors when the weather turns cold and wet. If the plants have set any fruits, a surface dressing of loam and bone-meal should be applied to the roots. Keep all side growths pinched out, and water the plants with care. Tomato plants intended for fruiting in winter should be kept well up to the light, and a free circulation of air should be allowed in the house when the weather is favourable. Move the plants into the final pots as they become ready, so that they may get well established before there is cold weather. White fly may be destroyed by fumigations.

Cucumbers.—Plants that are still bearing fruit, and showing signs of exhaustion, should be given a rich top-dressing of loam and horse-manure, with frequent applications of liquid-manure. Close the structures early in the day to conserve the sun-heat, and let there be plenty of moisture in the house. The present is a good time to sow a pinch of seed of such a variety as Telegraph, which is still a very reliable sort. Afterwards get a house

ready for them by washing all the wood-work and lining the walls. Prepare a hot-bed of long litter, and place small hillocks of loam and leaf soil upon it, and when the soil is thoroughly warmed through the plants may be planted in these. Apply a liberal amount of ventilation on all favourable occasions. Regulate the growths of plants that are still growing in pits and frames, cutting away any old leaves to make room for the extension of young laterals, which will still continue to yield a few fruits. Place fresh linings of litter to the frames where the bottom heat is on the wane. If there is an appearance of mildew on the foliage, apply a dusting of flowers of sulphur.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Naturalizing Bulbs.—For growing in the deep shade of trees there is no bulb better than the Wood Hyacinth or Bluebell (Scilla nutans). Many an uninteresting spot could be converted into a charming picture in spring by the free use of this flower, which adapts itself readily to such conditions, and increases rapidly. For similar places or for open glades the Grape Hyacinth (Muscari botryoides) has also much to recommend it; particularly the variety "Heavenly Blue," which should be planted for its pleasing colour, which, when seen in large sheets in combination with Daffodils and Tulips in the grass, is very effective. In the deep shade and shelter of trees colonies of hardy Cyclamens might be successfully made. Before planting the tubers the ground should be improved by manuring and the addition of fresh soil, remembering also that, though the plants enjoy moisture at the root, they cannot thrive on wet, sodden land, therefore good drainage is necessary. Unlike Cyclamen persicum the tubers of all the hardy species must be planted fairly deep in the soil. The Ivy-leaved Cyclamen (C. hederæfolium) is one of the best for naturalising, because of its pretty foliage. It is attractive during the winter and spring months, while in the autumn its flowers, which are usually borne profusely, are delicately beautiful. The round-leaved Cyclamen (C. Coum) is a splendid bulb for naturalising in the shade of trees, and also C. europeum, which is distinctly fragrant. Camassia esculenta, a North American plant, is a splendid bulb for planting in the open ground. A bold group in full bloom in June is a fine sight with the deep-blue flowers rising well above the grass. It thrives best in a moist situation, and in selecting a habitat for it in some deep, rich soil, it should be borne in mind that the grass about it cannot be cut until late in summer. Such plants as Crocuses, Narcissi, and Tulips ripen off comparatively early, but not the Camassia. There is another bulb which should be naturalised in conjunction with Snowdrops, Chionodoxa, and the Siberian Squill, to which it would form a charming and attractive addition in a semi-wild state in pleasure grounds and woodland walks exposed to the sun; this plant is the delicately-coloured Triteleia uniflora odorata. The flowers open at sunrise and in bright weather are very beautiful and fragrant. It is perfectly hardy, is capable of growing in almost any soil, and being cheap can easily be procured in large quantities.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Young Carrots.—Young Carrots raised from seed sown last month will be having a very trying time on light soils during the present tropical weather. It is important that growth should not be arrested by this cause, otherwise when rain comes the roots will split and become of very little value. Apply a mulch of horse droppings or short manure, and afford the plants liberal supplies of water. Green fly is most likely to make its appearance on the foliage, but may be easily arrested by syringing several times with soft soap and water, in which a little paraffin has been mixed.

Mushroom Beds.—Continue to collect material for making beds to provide a supply of Mushrooms in late autumn. The material composing any beds now ready for making up should be on the moist side in order to counteract the present dry condition of the atmosphere. Add a little loam and some half-decayed leaves to the droppings. This will economise the droppings and be also of service to the crop. Extra beds should be formed indoors, as there is little prospect in many parts of the country of obtaining Mushrooms in autumn from the fields, the drought being so severe.

Frame Cucumbers in pits and frames, and still bearing fruits should be given a final top-dressing and a general freshening up of the beds. Thin out the growth if this is excessive and shade the frames slightly, keeping the atmosphere rather close to cause fresh and rapid growth.

Gherkins being now plentiful, they should be made use of for pickling when sufficient can be had at a time for the purpose. Gather the fruits whilst still of small and uniform size.

Protecting Late Crops.—Make preparations for protecting such crops as Marrows, French Beans, &c., by having some temporary framework erected so that no trouble may arise when, after a change in the weather, there may be indications of frost. Very often there are two or three successive frosts very early, and these are followed by a period of open weather.

Seed Saving.—Those who are desirous of keeping the best stocks of vegetables should endeavour to save a few selected pods of Peas, French and Runner Beans, &c., annually, so that eventually an improvement may be brought about in each kind. Save just a few of each, selecting only the very best types.

THE HARDY FRUIT GARDEN.

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

Raspberries.—The old canes should now be cut down close to the ground, for they will be of no further service to the plants, and the young rods will receive the benefit of more light and air, which will be necessary to ripen them thoroughly. The Raspberry needs much moisture, therefore, if the stools are suffering from drought, afford them a supply of liquid at their roots and then apply some light mulching, which measures should suffice for the season. Raspberries require a change of soil occasionally, and it is a mistake to allow the beds to remain continuously in one position. If a new plantation is contemplated, a portion only of the old bed should be destroyed, for in re-making or renovating a plantation the work should be spread over several years so that the supply of fruits will not be discontinued. The ground selected for planting should be deeply trenched, and any old soil from the hot bed or potting-shed refuse, &c., can be incorporated during the process and will serve better than a lot of rank manure, which is not necessary for Raspberries when they are newly planted. The varieties to plant should include those which thrive best in the particular locality, but other newer kinds that have a good reputation may be allowed a trial. The best varieties for this district and also for that part of Surrey with which I am acquainted, viz., the Croydon neighbourhood, include Baumforth Seedling, which is an improved Northumberland Fillbasket; Hornet, a large and good flavoured variety; Norwich Wonder, one of the best Raspberries with all the qualities of a perfect fruit; Superlative, a very heavy cropper; Carter's Prolific, a good fruit and a free bearer, and, for autumn, use Belle de Fontenay.

Wasps have become very troublesome this season. All the nests of these pests should be destroyed as far as is possible. Bottles containing sweetened ale or beer should be hung among the fruit trees, and many hundreds will be caught by such means—I have tried several wasp preparations, but found none really effectual. The bottle should have a wide neck or mouth, so that the entry of the wasps will be quite easy. The traps should be emptied often or many will escape. Apple "Wealthy" should be protected early with tiffany or hexagon wasp-proof netting, for it is a great favourite with these pests. The temperature here on August 31 was 90° in the shade and 132° in the sun.

Early Apples should be gathered as soon as they are ready, but not before, or the flavour will be poor, and in a short time the fruit will shrivel. Red Astrachan, Worcester Pearmain, Lady Sudeley and Quarrenden will all be ready for harvesting and placing in the fruit room.

The Fruit Room.—This structure, if properly made, will be cool in summer and frost-proof in winter; the roof should be composed of a good thickness of either heather, reeds, or ordinary straw thatch, but the last-named is not nearly so lasting as either of the other materials. A span-roofed structure, such as is figured in the *Gardeners' Chronicle*, October 17, 1885, will be found best. The doors should be double and the windows be covered with perforated zinc, which will allow them to open wide, and it will keep out both flies and wasps. This kind of structure proves both cool and dry, and is thoroughly efficient for storing and keeping fruits.

Cordon-trained Trees must still be watered, especially those in districts where no rain has fallen and where they are trained on warm walls or growing on light soils. If this is not done the fruits cannot be expected to thoroughly develop, nor will the trees build up buds sufficiently strong for next year's supply. The present hot weather is a very anxious time for hardy fruit-growers, but no reasonable means should be spared to bring about the best results, as we have only about another six weeks before the bulk of the fruit will be stored.

Strawberries.—Attend to the necessary watering of newly-planted Strawberries, for where this is done the plants will make good progress.

THE ORCHID HOUSES.

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

Shading and Ventilation.—The shading with flour and water which was put on the glass of some of the houses, as advised in my calendar for April 28, is now gradually wearing off, thus allowing an increase of light to the plants, which at this season is of the greatest benefit to them. After this date there will be no need to use the blinds on the Dendrobium or Mexican houses, but during the middle of the day when the sun is hot plenty of ventilation should be afforded. Let both houses be closed early in the afternoon to retain as much sun-heat as is possible. The Cattleya house, which at Burford runs from north to south, will also need less shading with the blinds, those on the east side are not let down before 10 a.m., and are pulled up again by 12.30. At that time those on the west side are let down, and these are again removed soon after 3 p.m. All the plants in this house require much fresh air at this season, and together with the increased amount of sunlight this will cause the plants to dry more quickly at the root, thereby allowing more water to be given to them. Such treatment, if carried out with discretion, will enable the pseudo-bulbs to become plump, and the leaves of a firm leathery texture. In this house there are always some plants which are in various stages of growth, some even are only now commencing to grow, but the same treatment will benefit them also. When removing the blinds in the afternoon, only the top ventilators are closed, while those on the ground-line are left wide open, a "chink" of air, according to the weather outside, is admitted again at the top during the evening, and allowed to remain so during the night, the atmospheric temperature of the house thus falling to about 65° by the morning. The deciduous Calanthes also like the subdued sunlight, and with the Dendrobiums will not require the blind again this season. Examine the plants every morning and thoroughly water every plant that is dry. Do not allow these Calanthes to stand too closely together, but arrange them so that plenty of light may reach the new pseudo-bulbs, and that air may circulate freely around them. The Phalænopsis are producing many new leaves, and at this season require much sun-heat, which may easily be afforded if the glass is stippled, by removing the blind several hours before the sun ceases to shine on the roof. The bottom ventilators in this house are always closed, air being admitted in more or less degree through the roof ventilators. The interm diate and Odontoglossum houses having a cooler atmosphere, it is necessary to shade them rather more than others, but the blinds should not be kept down unless the heat from the sun is likely to raise the atmospheric temperature higher than what is considered advisable.

Canes of Dendrobium Wardianum that are finishing their growth in the cooler divisions, may, as soon as the terminal leaf is completed, be removed to a sunny position in a cool, well-ventilated structure. With the extra exposure the leaves will soon commence to change colour, when less water must be applied to the roots, discontinuing the supply altogether after the leaves have fallen. If the pseudo-bulbs are properly matured in this manner, they will not be likely to shrivel until they are in bloom, but should they show signs of doing so while the plants are in a dormant condition a little water may be afforded occasionally.

EDITORIAL NOTICE.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Sept. 8	Dutch Gardeners' Soc. meets at Richmond.
MONDAY,	Sept. 10	United Hort. Ben. & Prov. Soc. Com. meets.
TUESDAY,	Sept. 11	Roy. Hort. Soc. Comms. meet.
WEDNESDAY,	Sept. 12	Roy. Caledonian Hort. Soc. Show in Waverley Market, Edinburgh (2 days). Meeting of British Gardeners' Association at Edinburgh.
THURSDAY,	Sept. 13	York Dahlia Show (2 days).
SATURDAY,	Sept. 15	German Gard. Soc. meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—58·5°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, September 5* (6 P.M.): Max. 73°; Min. 54

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday, September 6* (10 A.M.): Bar., 30·1, Temp., 67°, Weather—Fine.

PROVINCES.—*Wednesday, September 5* (6 P.M.): Max. 67° Guildford; Min. 59 West Coast of England.

SALES.

MONDAY—

Sale of Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30 (also Wednesday).

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30, and every day except Saturday.

Twenty-first Annual Sale of Pot plants, at Dyson's Lane Nurseries, Upper Edmonton, by order of Messrs. H. B. May & Sons, by Protheroe & Morris, at 11.

TUESDAY—

Annual Trade Sale of Winter-blooming Heaths, &c., at Burnt Ash Road Nurseries, Lee, S.E., by order of Messrs. B. Mailer & Sons, by Protheroe & Morris, at 11.

WEDNESDAY—

Annual Trade Sale of Winter-flowering and other plants, at the Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.

THURSDAY—

Thirty-eighth Annual Trade Sale of Stove and Greenhouse Plants at Brunswick Nurseries, Enfield Highway, by order of Mr. J. H. Thompson, jun., by Protheroe & Morris, at 11.

Twenty-fifth Annual Trade Sale of Winter-blooming Heaths, &c., at the Longland Nursery, Sidcup, S.E., by order of Messrs. H. Evans & Sons, by Protheroe & Morris, at 11.

FRIDAY

Trade Sale of Ferns, &c., at The Nursery, Enfield Highway, by order of Messrs. C. Lucas & Co., Ltd., by Protheroe & Morris, at 11.30.

A Collection of Established Orchids, the property of a Nobleman, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Application of Electric Energy to Plant Growth.

Many years ago the late Sir William Siemens showed Strawberries forced by the electric light, at a meeting of the Royal Society. The fruits were of good flavour and had ripened in much less than the usual time. He also gave details concerning the application of the electric light to the growth of wheat and other plants. Our curiosity being roused by these results we took an opportunity of visiting Sir William Siemens' garden at Tunbridge Wells, at his request, and were not a little astonished at the results achieved. They were indeed so remarkable that the account of them might well seem incredible to those who had not the opportunity of seeing the results. (See *Gardeners' Chronicle*, April 3, 1880, p. 432, fig. 75.) Of course the question of the actual cost and of the net profit to be derived from the process was not at that time considered. We saw enough, however, to convince us that there was nothing to prevent the electric light being used in the winter months with profit, when solar light is deficient. Experience alone seemed required to convert the experimental into the commercial stage. Since that time various experiments have been made in France and in the United States tending to show that, with careful attention to details, much time may be saved, much labour spared, and good, that is to say profitable, results obtained. We had hoped that some of our societies and institutions would have taken up this matter which is obviously one of much practical importance, but our usual dilatoriness has up to the present prevented much being done, and we prefer to put money into the pockets of the foreigner rather than take the necessary trouble, and incur the inevitable risk attendant upon new enterprises. We believe, indeed, that some experimental cultures are now taking place at Bitton, Evesham and elsewhere, but these are of a different nature and have no relation to the use of the electric light for forcing purposes. Now that electric instalments form a part of so many country houses, it is indeed wonderful that so little progress has been made since the marvellous results of Sir William Siemens' experiments were made known. Now, however, we learn that Mr. B. H. Thwaite, a civil engineer, of 29, Great George Street, Westminster, has patented a means of applying the electric light and energy, the details of which appear to us to be so hopeful that we give the following specification in his own words:—

"This invention relates to an artificial method of stimulating the growth of vegetable, fruit, flowering, and other plant-life.

"It is well known that the rays projected from the voltaic arc electric light have markedly stimulating effects upon organic vegetable growth, and that the vigour of such growth is also stimulated and assisted by the passage of electrical energy through the moist earth supporting the roots; and it is also well known that carbon di-oxide is absorbed by the leaves of plants, and that a certain temperature environment is also necessary for the sustenance of certain kinds of flowers, vegetables, and fruit. The value of the nitrogenous element of sulphate of ammonia as a fertiliser is also well known.

"My invention consists in harnessing the intentional and consequential products of a combined suction or pressure-producer gas engine, and electric energy generating plant for providing all the defined and beneficial influences on plant life, in an economic and effective manner.

"I utilise the jacket water of the gas engine for heating the conservatory or glasshouse. I also utilise the carbon di-oxide of the gas engine exhaust gases for feeding the leaves, first purifying such gases before allowing them to enter into the immediate environment of the plants.

"I utilise the electric energy produced by the gas engine power in the following manner:—

"Assuming that the glasshouse protecting the vegetable growth is arena or circus-like in which, in circular tiers, are placed the potted flowering, fruit, or other plants.

"On a pole or post in the centre of the arena and which may support the roof, I suspend a powerful arc lamp equipment having a reflector, so arranged that the projected luminous beam is made to very slowly revolve, and in such a way as to bring its luminous influence on every plant, in intermittent and controllable periods of time.

"I may provide the arc light with a coloured lens to permit the isolation of the blue rays in the luminous beam from the red, or *vice versa*.

"Instead of the arena-like form of glasshouse I may arrange two long greenhouses parallel to each other, but connected by semi circular connections at each end. In such a long continuous glasshouse I suspend the arc light from small electric locomotors travelling on a central rail fixed just below the ridge of the roof, and running entirely round the two greenhouses.

"In this application I provide two arc lamps placed side by side, one having its reflector projecting its beams on one side, and the other projecting its beams on the opposite side.

"Of course, I may employ several couples of these reflector-equipped arc lights which travel either continuously or intermittently around the glasshouse; by this means the electric light beam is brought into active service for every plant in the glasshouse, and for any period of time required.

"I connect the electric supply, of a suitable character of energy (electric static), to the earth surrounding and sustaining the roots of every plant. This supply will invariably stimulate by electrolysis the growth of the plants.

"I prefer to water the plants from a central source, which water I also mildly electrify, the distributing pipes being electric non-conductors, or, if of metal, the pipes must be insulated.

"If the glasshouse is of the arena type, the distributing water supply pipe radiates from the central post and supply, and is slowly rotated by means of an electric motor, the distributing pipes either being equipped with distributing sprays or they are perforated so that the water falls on all plants as the service pipe rotates.

"When the glasshouse is of the rectangular type the electrified water distributing pipes slowly travel by means of an electrically driven gear, the water issues in sprays from the pipe and falls on to each line of pots.

"The application of my invention will have the effect of forcing the growth of fruit and flowering plants and vegetables, and will be especially appreciated in parts of the country near the large cities where the hours of sunlight are few and uncertain, and where the atmospheric temperature and hygrometric conditions are exceptionally variable.

"It is remarkable that the most economic method of converting the heat of coal fuel into work is also the most perfectly applicable to the electrical, thermal, and chemical stimulation of organic vegetable life. My invention harnesses all the qualities of this system of power-production to most satisfactorily effect the object in view, for instance, in the application of my invention on a large scale in which I use ordinary bituminous steam coal instead of anthracite for power gas generating purposes, I recover the ammonia from the gas produced, in a concentrated solution, for fertilising the soil in the rearing pots, &c., or I may convert it into a solid form as ammonia sulphate.

"My invention secures for the object defined, the efficient recovery of

"1. The nitrogenous matter of the coal.

"2. The sensible heat of the gas engine jacket water.

"3. The carbon di-oxide of the perfect products of combustion of the power gas, and

"4. Their sensible heat, all being available and efficiently utilised in addition to the electrically transformed power, to effect the object in view."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, September 11, in the Society's Hall, Vincent Square, Westminster, 1-6 p.m. A lecture on the "Education of the Cottage Gardener" will be given by Mr. T. S. DYMOND at 3 o'clock.

HOW TO CULTIVATE GLADIOLUS PROFITABLY.—In order to obtain a profitable price for the flowers growers are advised to so arrange the planting or potting of the corms as to have the plants in bloom in the spring months and in October and November, seasons at which buyers are readily found for them, whilst enquiry is very infrequent during the summer. For flowering in the spring months the American corms are to be preferred, and the first potting made at the beginning of January. For late flowering the corms must be kept cool and dry till the middle or end of the month of June, and then planted in batches as may be required. *Die Bindekunst.*

BRITISH GARDENERS' ASSOCIATION. The special meeting to take place on September 12 at the Bible Society's Rooms, 5, St. Andrew Square, Edinburgh, will be held at 5 o'clock instead of 7 o'clock, as announced.

ROYAL GARDENERS' ORPHAN FUND. At the recent show of the Earley and District Cottagers Society one of the tents was set apart for the sale of fruit and flowers in aid of the above Fund, and Mr. T. NEVE, the local honorary secretary, was thus enabled to forward to London the sum of £5 0s. 3d.

PRESENTATION.—The employés of the Warren House Estate and Gardens presented Mr. C. J. ELLIS, on the occasion of his recent marriage, with a handsome marble clock.

THE FRUITERERS COMPANY OF LONDON. In consequence of Mr. GEORGE BUNYARD, V.M.H., being master of this company this year, he invited the Court to visit the firm's nurseries, at Maidstone on the 28th ult. The day being very hot the home nurseries where the glass houses and the herbaceous plants, vines, &c., are cultivated were passed, and the visitors spent all their time in the Allington Fruit Tree Nurseries, where they were deeply interested in the abundant crops of Apples upon the orchard trees and the plot of 400 kinds of Bush Apples on the Paradise stock. There was ocular demonstration of the systems of culture and pruning to be followed if home growers are to hold their own against foreign competitors. The various operations of propagation and training were duly explained, and, on leaving, the party heartily congratulated the manager [illegible] upon the extent of the nurseries, good culture of the trees, and absence of weeds.

BOOK-KEEPING DOWN TO DATE. By ANDREW M[illegible]. London: EFFINGHAM WILSON, 51, Threadneedle Street; Glasgow: W. & R. HOLMES, 3, Dunlop Street.] This is a third [illegible] of a useful book, and claims to be [illegible] date." The writer knows his subject [illegible] aims at providing a convenient [illegible] volume suitable for students and [illegible] refresh the memory of workers. [illegible] for examinations in book-keeping [illegible] consult it as the information [illegible] quite comprehensible, even to a novice.

FIG. 74.—DWARF PHLOX "TAPIS BLANC," A VARIETY GROWING FROM 6 TO 12 INCHES HIGH; FLOWERS, WHITE. FROM SPECIMENS SHOWN BY MESSRS. GUNN AND SONS AT THE R.H.S. MEETING ON AUGUST 28. (See note in last issue, page 1[illegible])

THE PREVENTION OF COMMERCIAL CORRUPTION.—The *Florists' Exchange* in reprinting from our pages some remarks on this subject adds that "There will always be, we fear, different and differing views held on the very objectionable practice of giving and receiving commissions, and the evil has become so common and is so deeply engrained in mankind generally that it will be difficult to eradicate it, even though the effort be backed by law. Not long ago, after the appearance of some comments on the subject of "Gardeners' Graft" in our columns, we received a communication setting forth that the man who knew where to purchase goods profitably to his employer was entitled to any commission that the seller might see fit to give the gardener. The writer of that letter evidently did not consider that the wages he was receiving from his employer were paid to him to do the very best he could for those he was serving, both in the buying of goods and in every other way. A Philadelphia firm recently announced publicly by advertisement that it paid a certain commission to all gardeners buying of that particular concern. That seems to us to be one way of minimizing "graft"; for employers are thereby made aware that gardeners purchasing goods in that seed store would receive a "rake-off"; and, no doubt, would see to it that the same was credited to the actual buyer, and not his agent. As our London contemporary says: "There will be a difficulty in awakening the consciences of the recipients of commissions whether given by local or foreign tradesmen, for there are some men, too many, alas, with whom the eighth commandment is a dead letter; men who are willing to sink their manhood to the lowest level provided they can work for their own pockets all the time. For such men law has no terrors, and DANTE's Inferno is but a chimera. So what's the use?"

THE LASTING PROPERTY OF CLEMATIS FLOWERS.—The blossoms of Clematis Jackmanii, when removed from the plant as soon as they expand, will remain fresh for a week even in such a temperature as we have been enjoying (!) in this country lately. The flowers of this variety and others should find more employment in bouquets, and the various designs of the florist and floral decorator than is the case at the present time. *Die Bindekunst.*

KEW NOTES.

CEDRONELLA CANA.

A BED planted with this Mexican labiate commenced to flower in June and is now at its best. It makes a freely-branching, compact bush about 2 feet high, and has a strong but not disagreeable odour when handled. The whole of the inflorescence is of a rich rosy-purple colour, so that when the flowers drop it is still attractive. The species is not, however, hardy, but requires to be lifted and kept in a frame during the winter, or fresh plants should be raised from seeds sown either in autumn or spring.

MALVASTRUM LATERITIUM.

FOR covering a large space quickly this plant is most suitable, for while not growing more than 10 inches high, the creeping stems with their dark green leaves soon make a good sized carpet, studded with pale brick-red flowers produced on long stalks. A native of South America it is a hardy perennial, and it is growing and flowering freely in the present hot weather.

CENTAUREA BABYLONICA.

ONE of the handsomest plants belonging to this genus, C. babylonica, a hardy perennial, is an attractive object when well grown. It has bold foliage and stems reaching a height of 6 to 8 feet, covered nearly the whole length with yellow flowers. The stems and leaves are clothed with a white cottony down, giving the plant a silvery appearance. The species was introduced into this country nearly a century ago, but is seldom seen except in Botanic Gardens. The plants will grow in any good garden soil. The species is found in Asia Minor and Syria.

GENTIANA ORNATA.

THIS plant was first distributed by Herr Max Leichtlin in 1905 as Gentiana sp. It is now flowering, and has proved to be the true G. ornata, being quite distinct from the plant wrongly called by this name and figured in the *Botanical Magazine*, t. 6514. A native of the Eastern Himalayas and Sikkim, it occurs at elevations between 11,000 and 15,000 feet and is somewhat variable in habit. The present plant is of tufted habit, with many stems 5 to 6 inches long, narrow fleshy leaves, and solitary terminal flowers. These are about the size of those of G. septemfida and of a charming turquoise blue, the outside of the flower tube being conspicuously marked with dull purple and buff coloured stripes. It is evidently a free flowering plant and easy to grow, succeeding well in a moist and shady position.

PLANTAGO MAXIMA

is an ornamental Plantain from Siberia with large leaves, after the style of our native P. major. Its most distinctive feature is the long cylindrical head of flowers borne on a tall stem. The long stamens have a feathery appearance, and as the white flowers are produced freely the plant is very attractive. Plants raised from seeds sown in the spring flower the same year, and as a quantity of seed is produced on each plant it should soon become plentiful.

APLOPAPPUS CROCEUS

is a charming little Composite from the Rocky Mountains of Colorado, and grows about 1 foot high. It is of neat, compact habit, with small leaves and numerous yellow flowers about 1 inch in diameter. The most suitable place for this plant is in the rock garden, although it has also flowered well in the open border.

MISCELLANEOUS SPECIES.

THERE are many other interesting plants now in flower including Cacalia tuberosa from North America, with its large Plantain-like leaves, and stems 3 to 4 feet high, bearing singular looking flowers which are those of ordinary Composites. Jaborosa integrifolia is an interesting creeping plant from Buenos Ayres, forming a mass of dark-green foliage, amongst which are produced the Nicotiana-like flowers. One of the handsomest Pentstemons in flower at the present time is P. cordifolius, which is a shrubby, but only half hardy, species from California. The scarlet flowers are produced in great profusion on long, somewhat straggling, branches. It is usually killed in the winter even against a wall, except in the southern counties, but propagation by cuttings is readily effected, and plants may be kept through the winter in a cold frame. Carlina acaulis, with its curious thistle-like appearance and large flower heads, is also conspicuous in a bed by itself. Two late-flowering Dianthus are D. Noëanus from Rumelia, with narrow, grass-like foliage and white flowers with laciniated petals, and D. pinifolius from Greece, with light purple flowers in heads of three or four. Geum speciosum is a rare plant now in flower. It is a Caucasian species, found in 1891 by M. Alboff, who also was the means of introducing Campanula mirabilis. It has leaves similar to those of G. montanum, with orange-yellow coloured flowers produced on stems which grow about 1 foot high. *W. I., Sept. 2.*

FIG. 75.—VIEW IN ST. PAUL'S CHURCHYARD.

UNDER THE SHADOW OF "ST. PAUL'S."

ONE of the oases in the great City of London are the outer precincts of St. Paul's Cathedral, for they are laid out as lawns and flower beds, with fountains wherein the City birds splash and lave. Around the base of the fountains and along the numerous paths, with which the whole is intersected, are seats for the tired City worker or the visitor. The vegetation could hardly be described as vigorous, for apart from the sulphurous laden atmosphere the plants do not enjoy much light or air, the great dome casting its shadow around all, and the neighbouring houses approaching near to its walls. However, the most is made of the opportunities, and it is pleasant to look upon the grass and to enjoy the seclusion and quiet which the spot affords. One of the open spaces near to the Watling Street entrance has been laid out as a flower bed (fig. 75) against a background of shrubs. This piece of bedding has for its design the City of London's Arms and Motto worked out in carpet bedding. The quarterings of the shield are composed of Mesembryanthemum cordifolium variegatum, the cross and dagger being formed with Alternanthera. The whole of the shield is outlined with a broad band of the common Thrift. In front is a circular band in which is worked the motto, *Domine dirige nos*, the letter

being composed of golden coloured Pyrethrum on a ground-work of Saxifraga. Beyond is a row of Thrift, and the whole is completed by a line of Echeveria secunda glauca. Other flowers in the bed, apart from those used in the armorial design, are Pelargoniums, Koeniga (Alyssum) maritima, Celosias, Marguerites, Antirrhinums, Liliums, and a solitary specimen of Humea elegans. The shrubs at the back comprise Hollies, Privet, Aucubas, Prunus Pissardi, which looks very uncomfortable, and right under the wall a straggling specimen of the Tree of Heaven, Ailanthus glandulosus.

SPIRÆA MILLEFOLIUM.

From Mr. T. Smith, of the Newry Nurseries, we have received a spray of this distinct species of Spiræa (see fig. 76). Were the leaves seen by themselves, they might almost be mistaken for those of the common Milfoil, their superficial appearance closely resembling that plant. They are about 3 inches long, bipinnate, and very much sub-divided along the pinnæ. On their upper surface they are greyish-green and glabrous, but beneath they are covered with a dark-coloured tomentum. The whole of the shoot is of a sticky character, and even the brown-coloured stem is viscid. The flowers are produced in a terminal compound raceme, the example sent having an inflorescence about 6 inches in length. The individual flowers are of small size and not unlike those of the wild Fragaria vesca, the white petals being set off by a centre of numerous yellow stamens. The plant is by no means common in gardens, although it was introduced into this country from California in 1880. It forms a bush from 2 to 6 feet in height, and is hardy in favoured parts of this country. The plant has numerous synonyms.

Mr. Smith also sends us sprays in flower of Polygonum Sachaliense, one of the handsomest Knotweeds in cultivation, forming, as it does, clumps 6 to 8 feet high of graceful wand-like stems, with their accompanying bold truncate leaves.

FORCING FRUIT TREES IN POTS.

(Continued from page 158.)

Cultivation.

Fruit trees growing in pots require to be repotted every year. I have frequently been asked how often we pot our trees, and when the answer is given "every autumn," some surprise is expressed. It is, however, necessary to do this. I would not say that the trees would not succeed the second year, but after that, the soil becoming exhausted, growth would be weaker, the trees being then dependent mainly upon extra feeding. We like to commence potting the earlier forced trees by the middle of September, time is thus allowed for the roots to make fresh growth before winter. The "ball" of each tree is carefully reduced with a small two-tined claw, a process that is readily accomplished after a little practice. Sufficient of the old soil is taken away to permit of the tree being put back into a pot of the same size, as a rule, and sufficient space left that fresh soil can be worked down all round the roots, and made firm with potting sticks. A good layer of fresh soil is also placed over the rocks, and a moderate amount over the surface of the roots. In instances of trees that have a tendency to thrive above the average degree a larger size of pot is employed, and if others give indications of weakness at the root they are put into smaller pots. Our smallest trees are in 10-inch pots, and others are in larger sizes up to about 15 inches diameter for the largest. It must be an exceptional case to have larger pots than the largest in use here. To pot firmly is most essential, and at the same time carefully, so that no vacant space is left next the pot. To say that pots must be clean is almost superfluous; but the drainage, which in amount should be quite up to the average, should be composed of clean materials also. We prefer to place all the trees under glass as soon as they are repotted. Then, if given one good soaking of water, they will stand for some time. When the weather is warm and dry they are syringed at least once each day, otherwise, with some few leaves still upon them, there may be a tendency to shrivel. I try to keep these leaves fresh for a time, and success in doing so indicates that all is well with the trees. In housing these newly-potted trees, they are stood pot to pot, or nearly so; thus we can accommodate the trees of four houses in one house with ease, thereby saving room for the late trees and for such catch crops as Chrysanthemums, &c.

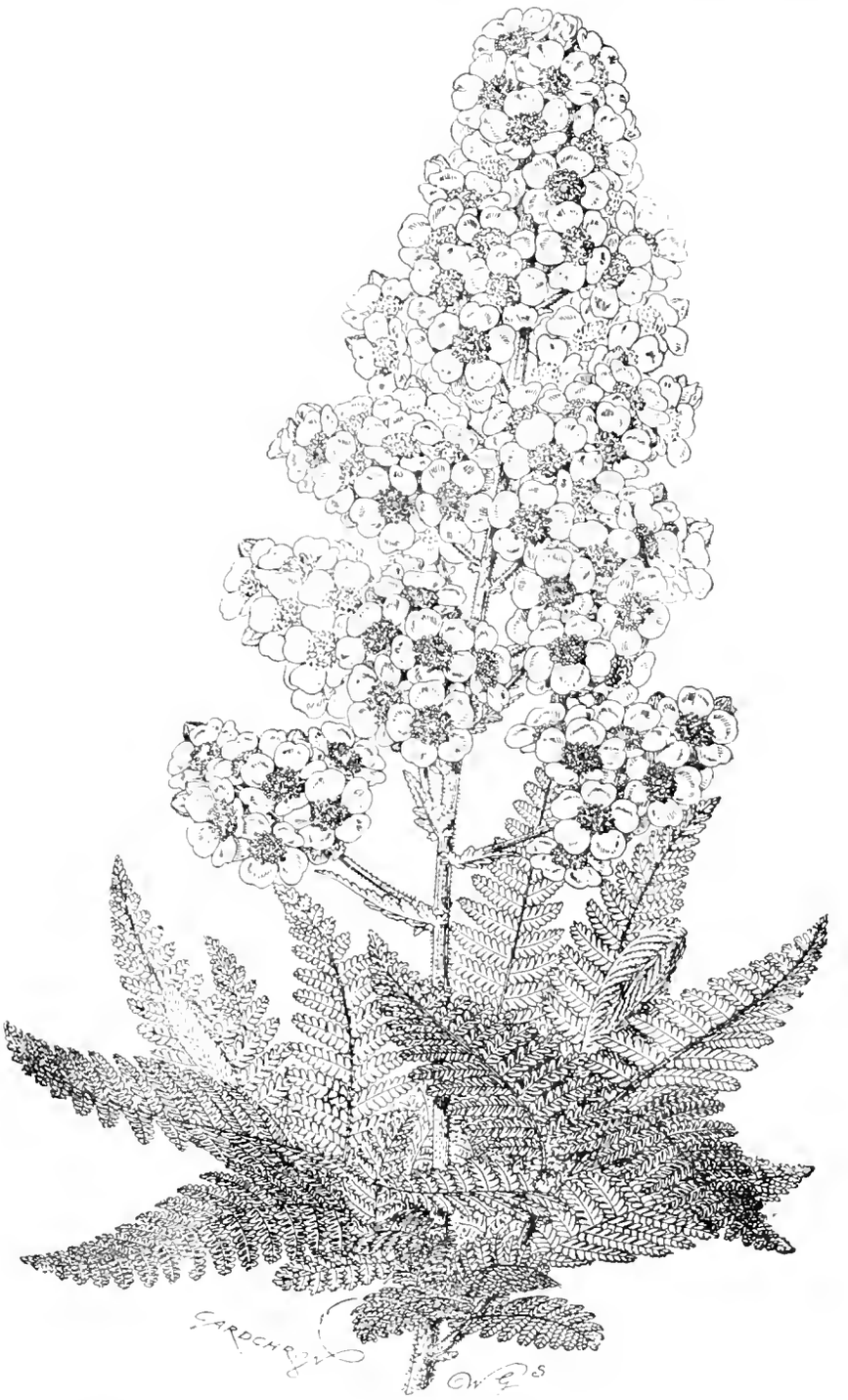


Fig. 76.—Spiræa millefolium: flowers white, with a cluster of yellow stamens.

Nature of Soil.

This should be of as good a quality as it is possible to obtain. We have, up to the present, always used some of the Banstead loam—say about two-fifths. (I said up to the present, that is, up to last autumn, but I have now ceased to use this loam for anything, as the quality has so much deteriorated. It is not now worth, in my opinion, one-third of its cost.) I now obtain all the special loam for fruit trees and other plants from Kettering, in Northamptonshire. This is worth three times as much as the Banstead loam, and there is no waste with it. I can get this Kettering loam delivered to our nearest goods station for 5s. per ton less than I paid for that from Banstead. The new loam needs tempering with one of lighter character, and for this purpose we use a good local loam with some iron in it; of this loam about another two-fifths is added. The remaining fifth is made up of old mortar rubble after it has been pulverised down to the size of small nuts, or less, also of some well decomposed manure, such as that procurable from a spent hotbed. This mixture, after being turned a few times,

should be kept dry for the better handling when used for potting. We let it lay for a few weeks in the heap before it is used. Loam of a calcareous character, that is, one having a proportion of lime in it, is most essential, from whatever source it may be obtained.

TOP-DRESSING.

We make it a practice to top-dress the trees during the time of growth; this is done during the stoning period, so that the roots may derive benefit from this addition when the fruits commence to swell quickly. For this top-dressing we use a mixture of good loam (Kettering, this spring) with some decomposed manure, and, in addition, a manure that is now advertised in the gardening papers, and known as "Hop Manure" (Wakeley's). This manure is chiefly composed of spent Hops, and it suits almost any kind of fruit tree in pots; Fig trees, in particular, root into the top-dressing thus made with great rapidity. I have not had this Hop manure analysed, but I believe it contains a good proportion of both phosphates and potash as constituents. The top-dressing is applied firmly around the sides of the pot well up above the rims, and in such a way as to provide for the watering process nearer to the stems. Later in the season, say when the fruits are all gathered, the top-dressing will be found to be percolated with roots throughout, hence it is the means of providing such plant food as tends to build up the trees for another season.

THE AFFORDING OF WATER.

Some fears may be entertained that fruit trees in pots are much trouble in this direction; such, however, is not the case. If I might draw a comparison, I should say that Chrysanthemums want quite as much attention. After re-potting, extra care is necessary in order to guard against the old balls becoming too dry and the new soil too moist. When writing of re-potting, I should have stated that whenever a tree is found to be dry at the root it is placed in a tub and soaked before it is turned out of the pot. When forcing is commenced, the atmosphere of the house is kept in a humid condition by both syringing and damping down, and thus we prevent frequent watering at the roots. As growth commences, first with the opening of the flowers and the young leaf growth that so soon follows, it is necessary to make sure that the trees do not suffer from either extreme. With a little practice in the watering, it will soon become an easy matter. Later on, when in full growth, an abundant supply is needed, for drought then would be most injurious.

MANURIAL STIMULANTS.

When the fruits are swelling freely, say when as large as the common nut, an occasional application of manure is beneficial. At first, I recommend the use of an artificial compound in which both phosphates and potash are important factors; such, for instance, as a compound containing from 25 to 30 per cent. of soluble phosphates, 18 to 20 per cent. insoluble phosphates, and 2 to 3 per cent. of potash. The phosphates are most important in the cultivation of stone fruits for the proper development of the "stone" and kernel, without which it is impossible to secure good fruits. This same manure may contain 4 to 5 per cent of ammonia, which will excite root action. The better method of application is to take a pinch between the thumb and finger for a smaller size, and between the thumb and two fingers for a larger size pot. Such an application if given once a week will be productive of good results when average crops are swelling, rather more being applied for heavy crops. As the fruits begin to swell freely after stoning, liquid manure will then serve a good purpose, but an application once a week will be ample, this taking the place of the artificial manure. Cease giving any manure when colouring has well set in; depend then rather upon close attention to the ordinary watering.

AMOUNT OF CROP.

When a good set of fruit has been secured guard against any temptation to crop the trees too heavily, but do not thin rashly. I am now thinking more particularly of Nectarines, Peaches, and Plums. It does not do to thin Cherries too freely; one must watch these very closely and be quite sure that the fruits will swell, then thinning can be done with a pair of vine scissors. In any case, bear in mind that a heavy crop means smaller fruit, with the same development of stone, but with a lesser degree of fleshy matter around it. It is a difficult matter to say how many Cherries a tree should bear; one must judge for one's self, taking into consideration the health of the tree and its leaf development. Our smaller trees of both Nectarines and Peaches will carry from 6 to 8 fruits, the medium-sized trees up to 12 and 15 fruits, and the largest up to 20 and 24 fruits. Plums will carry about one-third more in numbers. *J. Hudson, Gunnersbury House Gardens.*

(To be continued.)

HOME CORRESPONDENCE.

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

OUTDOOR PEACH CULTURE. — Writers on this subject seem to infer that Peach leaf blister is of somewhat recent trouble. I well remember how injurious a pest it was as long since as 1850 even in so comparatively warm a locality as that of Southampton; nevertheless, very fine Peaches were produced there. One of our best open wall Peach growers was the late Mr. Lindsay, of Ditton Park Gardens, Slough. His Peach wall 30 years ago was one of the best in the kingdom, and in spite of blister, and an entire absence of canvas or other protection, his crops of fruit were almost marvellous. But in the old days gardeners had no greater object for pride in their gardens than in showing fine clean Peach walls. Is there less capacity to cultivate such trees now? I think not. The difficulty lies now, I fear, in our very prolonged, cold, ungenial springs, for without cold the blister fungus seems comparatively harmless. Peach trees are hardy, certainly, but the young leafage is comparatively tender and seems to need shelter from cold in the spring quite as much as the bloom does. *D.*

— On p. 167 *M. M. N.* mentions as a reason why the Peach is not more generally grown out of doors that the fruits have but poor flavour. My experience is just the reverse, and I have heard many ladies and gentlemen remark "Give me a good Peach from outside, they are very much nicer!" *W. A. Cook.*

— Mr. Ward appears to treat "blister" very lightly. Although Devon may be a favoured county, some of its gardens are not in ideal spots, and many suffer from the effects of cold, and in an ungenial spring "blister" is very serious. I am aware that removing the blistered leaves is the only remedy, but when the disease is severe, entailing the removal of a large proportion of the foliage, all the trees do not recover readily; that is my experience in *North Devon*

BEECH TREES AND LIGHTNING.—I should be glad if any reader of the *Gardeners' Chronicle* can corroborate this incident. Seventeen or 18 years ago, when I was but a lad living at home in Hampshire, we had a very heavy thunderstorm, accompanied by vivid, forked lightning, and a Beech tree was struck by lightning on the Rotherfield Park Estate, at East Tisted, near Alton, Hants. The tree stood in the hollow opposite the end of Winchester Wood nearest the mansion. I have always remembered it as a Beech tree and am almost sure I am correct, but as it happened so long since and I was only a lad at the time, I cannot be sure. No doubt there are still some living on the estate that were there at the time I mention, and they could tell us if I am right or wrong. *W. A. H., Dulwich Common.*

— I believe it to be a rare occurrence, but I saw one Beech tree, say about eight years ago, which had been struck by lightning. It was in West Berks, and the tree stood in the middle of a wood which was comprised mostly of Beeches, the majority of which were from 50 to 70 feet in height and 1 feet to 5 feet in circumference. This one was broken off by the lightning probably at about from 20 to 25 feet from the ground, and the stump which was left standing was splintered so much that it resembled a large bundle of plaster laths wrapped round with a piece of bark. All the way down one side a strip of the bark was taken out by the lightning, otherwise the tree was sound. *F. M.*

— The Beech tree is not altogether immune from the attacks of lightning, inasmuch as about 15 years ago, to the best of my recollection, when upon a casual visit to see Wyddrington House, Edgbaston, the interesting seat of J. E. Wilson, Esq., the head gardener, Mr. Wm. Jinks, pointed out to us growing in close proximity to the conservatory adjoining the house a tall old Beech tree near the carriage drive, and which had been struck by lightning a few weeks previously. As the whole of the foliage had become shrivelled the tree was condemned to be cut down as past recovery, though strangely there was no other evidence of injury to either bole, branch, or the bark; apparently the comparative smoothness of the bark of the tall and upright bole acted as a more facile conductor of the electric fluid than that of a large-branched and rugged-barked one. Mr. Jinks drew particular attention to this circumstance in evidence of the fact that the Beech was not altogether immune from lightning. Mr. Jinks was only a few yards distant from the tree when it was struck, and distinctly saw the electric fluid pass down the tree in question and appear to enter the ground without leaving any symptoms of disruption. Fortunately, though considerably shocked, he himself was not injured. It may be added that the tree constituted one of the boundary trees of several other kinds forming a large clump. It is interesting to observe the curious behaviour of lightning when in contact with trees, and I have witnessed a few curious instances during a long life, one of the most remarkable being that which occurred some 12 months ago within a quarter of a mile from my abode. One sultry forenoon, when passing along one of the main public roads here, the sky suddenly became cloudy, and a thunderstorm burst overhead; almost simultaneously a very tall and straight-boled Larch was struck by the electric fluid—as witnessed by myself and a friend who had taken shelter beneath a large Elm, only about 15 yards distant. The stricken tree was the only one of its kind in the long belt growing in close proximity to the roadside, and being somewhat taller than the others, with its pointed apex, no doubt it afforded a ready conductor to the fluid. Subsequent investigation proved that the tree did not exhibit any trace of injury excepting the scattering of a few small pieces of the exterior bark from the upper portion of the trunk, and at the present time the tree appears to be as flourishing as ever. The rain was of short duration and consisted of a few large drops only. The most remarkable feature, however, was the apparent course of transit of the fluid when leaving the Larch, it having passed to an adjacent tree—a variety of the English Elm growing about 6 feet distant, the only visible rupture being a slight abrasion of the bark close to the ground, immediately above one of the roots, about the size of a stout walking-stick, and which grew close beneath the surface of the soil—towards the low roadside embankment, and where its naturally bared root was found to be shorn of a portion of its bark. It should be noticed that the light, sandy soil round about was at the time in a very dry condition. *William Gardiner, Harbone, Birmingham.*

VEGETABLES AT SHREWSBURY.—(see p. 166). *A. D.* has certainly made a suggestion that most exhibitors in the vegetable classes at the late Shrewsbury show will heartily agree with. I refer to the proposal to form a champion class in which the exhibitors could meet each other without it being required that the produce has been raised from Messrs. So and So's seeds. There is the open class for 12 kinds, but the prizes in that class are quite unworthy the name of a rich society like Shrewsbury, and not comparable with those in the trade classes, hence the lack of keen competition. At the present time there are so many trade classes of equal value, or nearly so, that unless one were to buy seeds from each firm, in order to compete in each class, there could be no champion. The suggestion that all this year's prize-winners should compete in the champion class by compulsion, is, I think, hardly necessary, as anyone with the least pretension to become champion would need no inducement to urge him to compete. I feel quite certain that if the Shrewsbury authorities will consent to the suggestion that *A. D.* has put forward, there will be no lack of enthusiasm amongst the exhibitors. The conditions of such a

class should be made equal to all exhibitors, by stating beforehand the numbers of specimens permitted to each dish, and the maximum number of points to be given to each dish, after the system adopted in the fruit classes at Shrewsbury and in the vegetable class at Edinburgh last year. The suggestion will, doubtless, have the consideration of the Shrewsbury authorities, who are always anxious to do what they can for exhibitors and the public. Exhibitors have always been grateful to the trade for the encouragement they give to exhibitors of their specialities, and this appreciation will be none the less after the introduction of a champion class where the best of everything will have to be shown. *James Gibson.*

FRUIT IN KENT.—Apples are a fair crop, also Gooseberries, Raspberries and Currants; Pears in the open suffered severely from frost during April and May. Plums are quite a failure; Strawberries were a good crop. The soil here is from medium to heavy, resting on a gravel subsoil. *J. Roberts, The Gardens, Broomhill, Tunbridge Wells.*

LUTON HOO.—On paying a short visit to this beautiful place I was pleased to see the improvement that had been made during the last two years under the superintendence of Mr. A. Metcalfe. Extensive ranges of glass have been erected to grow fruit, plants and cut flowers. The Peaches and Nectarines appear wonderfully healthy, and have borne good fruits considering they have only been planted for two years. The kitchen garden looked as if no rain was wanted. Mr. Metcalfe has had water pipes put on the top of the wall all round the kitchen garden, thus the water is chilled before it is used, and can be applied to any part. Many cordon fruit trees have been planted. Some thousands of plants of Royal Sovereign Strawberry in 6-inch pots were plumping up well for early forcing. In the pleasure grounds the flower beds were very gay. There are some fine Conifers there that are well worth seeing. Mr. Metcalfe informed me that a Japanese garden, an Italian garden, and a huge rockery are features it is intended to add to the establishment. *Visitor.*

CARVING INITIALS AND NAMES ON TREES.—I am not surprised at Lord Durham prosecuting a man for carving his own and his wife's initials on the trunk of a tree at Lambton Park. Such vandalism is, unfortunately, far too often perpetrated, and the sooner a stop is put to the nuisance the better. The famous Beech trees at Knole Park, near Sevenoaks, which I visited some years ago with Lord Sackville, have been barbarously treated at the hands of the initial carver, while at the instigation of the late Earl of Derby I had the historic Wilberforce and Pitt Oaks fenced around to prevent similar injury. When I visited visited the picturesque Coney Island property of Lord Charlemont recently I was shocked at the mutilated stem of the Beech tree with the never-failing well of water in its trunk, which is pointed out to privileged visitors to the beautiful and interesting island. But I could give numberless instances of this form of tree mutilation, which is by no means confined to Britishers as the addresses plainly show. *A. D. Webster, Regent's Park, August 30, 1906.*

"A CORNISH TRIP."—In Mr. Druery's interesting article on his tour in Cornwall, he alludes to the fine Cordyline australis in Mr. Howard Fox's garden at Rosehill, Falmouth, as probably the finest specimen in the country. It is, indeed, a splendid example, but its dimensions are a trifle exceeded by a specimen at Enys, which was raised from seed sent from the Antipodes 46 years ago. When I last measured Mr. Howard Fox's Cordyline it had a girth of 5 feet 5 inches at 1 foot from the ground, whereas at the same height the Enys specimen had a girth of 6 feet 1 inch. This example divides a short distance above the ground level into four main trunks, which are again subdivided into some 36 heads, 10 of which bore flower in 1904. Mr. Druery speaks of the tropical appearance produced by Calla (Richardia) æthiopica [Africana], but this is seen nowhere to such advantage in the south-west as at Trelissick, where, in the first week in June, some thousands are in flower around the lake (see illustration in *Gardeners' Chronicle*, May 27, 1905). I may say that I was informed during a visit to Cornwall last spring that the Fern so largely grown in that country as Lomaria magellanica, and alluded to by Mr. Druery, was stated by the Kew authorities to be L. procera. Sir A. P. Vivian's seat is Bosahan not Basahan. *S. W. Fitzherbert.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

AUGUST 28.—*Present:* Dr. Maxwell Masters, F.R.S., in the Chair; Messrs. Rolfe, Arthur Sutton, Geo. Massee, Worsley, Saunders, Hooper.

Melon leaves.—Mr. MASSEE reported that the leaves submitted to him at the last meeting were sun-burnt and that there was no fungus present.

Diseased Deodar.—Mr. MASSEE reported that the trees were attacked by a species of Rosellinia. Leaflet No. 64 of the Board of Agriculture and Fisheries gives an illustrated account of the fungus and the method of combating it.

Japanese Iris.—Some specimens in a diseased condition sent from Romsey were referred to Mr. MASSEE.

Aerial roots on Vines.—The following communication was read from the Rev. Prof. HENSLOW:—

"Going over a florist's grounds and houses lately at Kenilworth, the florist called my attention to a peculiar coincidence. In a long row of vines, only one had aerial roots, and the Grapes on that plant only were much in advance in size (all were green) as compared with all the rest in the house. The root has a three-walled epidermis, the cells, of a thick cortex and pith, being three-walled, very compact, and full of water (no starch being present), with a feebly developed zone of phlœum and xylem. On allowing a root to lose some of its water by evaporation, I placed it in water for 12 hours, the cut-end being in air. It gained 30 per cent. of its weight in recovering its former condition. I shall be glad to hear if other vine-growers have noticed a similar coincidence, and, if so, whether they could trace any cause and effect. *G. Henslow.*"

Potatos.—Mr. ARTHUR SUTTON exhibited fruits of Solanum Commersoni with well marked heart-shaped, somewhat flattened, berries; berries of S. polyadenium, S. verrucosum, and of a reputed wild form of S. tuberosum were also shown. Two berries were exhibited from M. Labergerie's variety which were of a globose form, quite like those of an ordinary Potato. No fruits had, up to the present, been observed on plants of "Blue Giant," and up till 1904 M. Labergerie reported no fruits had been seen on his Potato. In the Journal of the *Société Nationale d'Agriculture de France* M. Labergerie reports this year that the fruits on his Potato are not round, but pointed or heart-shaped, like those of the wild type, and when they approach the round berries of our Potatos they still have a characteristic "*stilon*" or indentation. Mr. SUTTON also showed various drawings to scale, by Mr. Worthington Smith, of S. Commersoni and its assumed derivative. The form of the pollen-grains and of the hairs on the petals was particularly interesting. Dr. MASTERS showed tracings and drawings of most of the species and varieties inspected near Reading by certain members of the Committee recently, when the members present failed to perceive any material difference between M. Labergerie's variety and "Blue Giant," whilst both were widely different from S. Commersoni.

Aristolochia elegans, &c.—Mr. WORSLEY showed flowers of this species from the vicinity of Rhodes's tomb in Rhodesia, to which locality it must have been introduced from Brazil. The West African A. Goldieana [see fig. 72] was also noticed as spreading widely in Africa. Fruit pods of Ceropegia Woodi were also exhibited, presenting the usual cylindrical narrow form.

Leaves of Plums.—Mr. HOOPER called attention to the singular provision for the protection of the buds at the base of the petiole, and asked for other examples of a similar kind.

Various diseased leaves.—Mr. SAUNDERS exhibited leaves affected by a species of Psylla, Box leaves affected with Sphærulina buxi, and Violet leaves attacked by Cercospora violæ.

THE LATE PROF. MARSHALL WARD.—On the proposition of the Chairman, it was decided to send a letter of condolence to the widow of Prof. MARSHALL WARD, for many years a valued member of the committee. THE LATE C. B. CLARKE.—Reference was also made to the sad death of this distinguished botanist.

THE NEXT MEETING.—It was decided that no meeting should be held on September 11, but that the business should be adjourned till September 25.

READING HORTICULTURAL.

AUGUST 29.—The members of this society held their Jubilee Exhibition in Forbury Gardens, Reading, on the foregoing date. The number of entries exceeded those of last year, and a most successful show of flowers, fruit and vegetables resulted. Competition in many of the classes, notably those for fruit, was very keen. Four large tents were requisitioned to hold the exhibits. This being the 50th exhibition of the society, a luncheon, at which the Mayor of Reading (Mr. E. Jackson) presided, was held prior to the opening of the show.

PLANTS.

An important class was one for a group of miscellaneous plants arranged for effect. Five exhibits were staged, by far the best being that from E. WAGG, Esq., The Islet, Maidenhead (gr. Mr. D. Phillips), Codiæums (Crotons) were a feature of the group; 2nd, S. B. JOEL, Esq., Marden Erleigh (gr. Mr. F. Johnson). In an open class for four stove and greenhouse Ferns, E. WAGG, Esq., was again successful. The best four stove or greenhouse plants were shown by J. B. TAYLOR, Esq., Sherfield Manor (gr. Mr. T. Brown). Fuchsias are always shown well at this show. J. F. FRIEDLANDER, Esq., Whiterights Park (gr. Mr. F. Bright), was, as is usual, 1st in the open class for six specimens; indeed, this made the 21st time in 23 years that Mr. Bright has gained first position for these plants. Miss K. RATCLIFFE, Westfield, Reading (gr. Mr. H. Booker), was 1st for three specimen Ferns. J. FRIEDLANDER, Esq., was 1st among four exhibitors for six double-flowered Zonal Pelargoniums.

CUT FLOWERS.

Dahlias were a feature in this section. The cactus varieties were above the average quality, and of these there were no fewer than 7 exhibits in a class for 36 blooms in 12 varieties. Messrs. J. CRAY & SONS, Frome, were placed 1st with a grand exhibit, the varieties Mrs. E. Mawley, of a clear yellow shade, and J. H. Jackson, a dark variety, were conspicuous; 2nd, Mr. J. WALKER, Thame. The latter led for 24 show or fancy Dahlias, and for 12 varieties Messrs. J. CHEAL & SONS, Crawley, were placed 1st. This firm also secured the leading awards in the open classes for single and pompom Dahlias.

Roses were well represented. Mr. G. PRINCE, Oxford, won for 18 varieties, a flower of Ben Cant being very prominent in his exhibit. Messrs. F. TAYLOR, Chipping Norton, were 1st for 12 varieties. Keen competition was shown in the class for 6 Roses (nurserymen excluded), C. E. KEYSER, Esq., Aldermaston Court (gr. Mr. A. Galt), being 1st among nine competitors. The 1st prize in the class for 12 vases of any variety of cut flowers was taken by J. B. TAYLOR, Esq., his examples including Gloriosa virescens, Bougainvillea glabra, Carnation Raby Castle, Roses and Allamandas. The same exhibitor was also 1st for six vases of hardy flowers. Mr. W. PALMER, Andover Nurseries, was 1st for nine vases of Sweet Peas. Five exhibits were seen in the class for six vases of Asters; Mr. A. A. JONES, Caversham, won the 1st prize. The best decorated table was arranged by Miss G. PALMER, who used Sweet Peas of pink and blue shades, with Asparagus and Smilax. Miss JOHNSON had the best basket of sweet-scented flowers, and Mrs. H. W. DUNLOP the best decorated epergne.

FRUIT.

The fruit classes are usually well filled at Reading, and this year was no exception. In the class for six dishes of fruit there were six exhibits. G. W. FLEMING, Esq., Romsey (gr. Mr. W. Mitchell) was placed 1st, and he also won for three bunches of Black Hamburgh Grapes and for three bunches of any white variety of Grape. J. B. TAYLOR, Esq., was first for any other black Grape with the variety Madresfield Court. A dish of Barrington Peaches staged by S. MONCK, Esq., Coley Park (gr. Mr. Booker), secured the 1st award for these fruits. Lady SUTTON, Newbury (gr. Mr. J. Howard), showed the best Nectarines in a dish of the variety Pineapple. Plums were a very strong class. S. B. JOEL, Esq., gained the premier award with fine samples of Magnum Bonum, Jefferson's, and Kirke's. J. B. FORTESCUE, Esq., Maidenhead (gr. Mr. C. Page) was 1st for three dishes of dessert Apples. In the class for culinary varieties the Earl of CLANWILLIAM was 1st amongst 12 exhibitors. S. MONCK, Esq., had the best dessert Pears. Classes were also provided for Melons, Tomatos, and Cucumbers.

VEGETABLES.

Two competitors only contested the open class for Messrs. Sutton and Sons' prizes, and both were very excellent exhibits. Lord ALDENHAM, Elstree (gr. Mr. Ed. Beckett), was awarded the 1st place with 55½ points, and he was closely followed by G. D. FABER, Esq., Wallingford (gr. Mr. J. Dymock), with 55 points. For a collection of six varieties, F. D. LEYLAND, Esq., Basingstoke (gr. Mr G. Best), gained the 1st award.

Classes were provided for cottagers and artisans residing within 10 miles of Reading Market Place.

NON-COMPETITIVE EXHIBITS.

Honorary exhibits were numerous. Mr. GEORGE PRINCE, Oxford, staged a splendid group of cut Roses; Mr. F. EAMES exhibited bunches of hardy flowers in great variety. Mr. G. PHIPPEN showed floral designs; the UNIVERSITY COLLEGE, Reading, had an extensive and highly meritorious exhibit of Melons, Tomatos, Cucumbers and Grapes. Other exhibits were staged by Mr. T. RIGG, Caversham, Messrs. T. POWELL & SONS, Bath Road, Messrs. J. HOLDER & SONS, and Mr. S. J. VINDEN, Minster Street.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.

LECTURE ON FERNS.

SEPTEMBER 4.—At the meeting of the above association held on this date at Winchester House, Old Broad Street, Mr. Chas. T. Druery, V. M. H., F.L.S., gave an interesting lecture, illustrated by lantern slides, on the wonders of Fern life, with special reference to the varietal Ferns of Great Britain. The first lantern slide represented an ideal landscape, or rather land and waterscape, of the Coal age, when the Ferns and their allies laid the foundation of our coal measures. The remarkable mode of reproduction common to all Ferns was shown on the screen by a number of unique slides reproducing the drawings of Count Suminski, who first completed the discoveries of the normal life cycle of Ferns in 1846. Mr. Druery then described numerous variations of this life cycle, practically demonstrating that every link in the normal chain of phenomena could be left out singly or in numbers and yet the final result of a new generation be reached. The wondrous fertility of Ferns through their spores was exemplified by a slide showing the total of one season's crop of spores from a single Fern plant in his own collection to be no fewer than 1,120,000,000, each of which is, moreover, potentially capable of producing several Ferns. Extraordinary sports, of which so large a number has been found wild in our British glens, lanes, hillsides, and even roadsides, together with the still more curious and beautiful forms which have been raised from these by selective culture, were next dealt with. A considerable number of fine photographic slides exhibited specimens of these in many species—tasselled, plumose, dissected and varied in innumerable ways, and often so different from the common plain, or normal type that unless acquainted with them one would not credit their origin. In connection with the few cultivated and improved varieties Mr Druery illustrated his own beautiful series of plumose Lady Ferns, the now well-known "superbum" section, by a number of photographed fronds, including one showing the pedigree and demonstrating how immense was the stride between parent and offspring in this particular case. This, however, was almost equalled by another slide showing the origin of some of the most beautiful plumose Shield Ferns. A picture of the lecturer's own British Fernery as it existed at Forest Gate was also shown.

ROYAL SCOTTISH ARBORICULTURAL.

THE members of the Aberdeen branch of this society made their second excursion for the season on Saturday, September 1st, their destination on this occasion being the Huntly district of the extensive estates of the Duke of Richmond and Gordon, in which is situated the famous Bein Hill Wood. There was a good attendance of members, including landowners, factors, and head foresters. The arrangements were ably carried out by Mr. Robert Scott, solicitor, Aberdeen, hon. secretary of the branch, while the party was conducted over the policies by Mr. John Duff, Factor, and Mr. John Rule, Head Forester on the estate.

The members met at Huntly Station, and were driven westwards in brakes by the banks of the Deveron towards Glass. A short halt was made at the Dunbennan Wood for the purpose of ascertaining how Larch trees planted in 1888 were withstanding the fungoid disease so prevalent in many parts of the country. There were evidences of the fungus Peziza Willkommii. On the whole, however, the plantation was found in a fairly healthy condition, with good promise of yielding excellent timber in the future. Interspered with the Larch in this wood are many young Scotch Pines, which showed vigorous growth. It was remarked in passing that the trees bore an exceptionally large number of cones, which were found to contain healthy seeds, but the cones being so numerous, they raised doubts as to the healthy character of the growth of the trees, it being a well-established rule that trees bearing a large number of cones are not so vigorous as those which have only a moderate number. But it was pointed out that cones were this year exceptionally numerous on those Pines. The party thereafter drove to the famous

BEIN HILL WOODS.

On entering the woods the great amount of space between the Larch trees caused comment, the opinion being freely expressed that underplanting could be resorted to with considerable advantage. The grass and vegetation was particularly rich in growth, affording evidence that plenty of light and air reached the undergrowth. The party next rambled through the extensive Bein Hill forest of Larch trees, led by Mr. Rule and Mr. Wilson. Mr. Rule stated that the Bein Hill had been planted from 65 to 67 years, being started in 1839, and completed in 1841. Originally there were 2,258 acres, and subsequently the area planted extended to 2,450 acres. The price of planting, including plants and cleaning, was £1,956. Other expenses were: Ditching, £225; grubbing whins, etc., £54; enclosing the land with stone rickle dyke, £464; road making, £180; expenses of survey, £76; bringing the total cost, including plants and planting, to something like £3,000, or to £1 6s. per acre. In the original planting 6,387,000 young trees were put in, and as the contract included the maintenance of the plants for four years, the contractors put in an additional 100,000 plants, as many of the plants originally planted had been placed in situations unsuited to them. In addition, also, the proprietor had subsequently, at an additional expense, to introduce another 650,000 plants, bringing the total number of plants to about 7,000,000. When the trees were from 20 to 25 years old, signs of disease were apparent, but now the trees are in a fairly healthy condition. While the average cost of planting 65 years ago was 17s. 6d. per acre, or including everything, 26s. per acre, the cost of planting now would amount to about £4 per acre.

The company proceeded to a point in Burnside Croft, where extensive clearing operations are in progress, and where Messrs. Lockhart, Huntly have erected an up-to-date saw mill. The members had the pleasure of seeing the mill in operation.

Mr. John Clark, forester to the Earl of Aberdeen, said that the planting of trees had largely influenced the climate in the neighbourhood.

The excursion was in every way most successful and enjoyable, although the weather was very hot.

NATIONAL DAHLIA.

(By Telephone.)

SEPT. 6 and 7.—The weather in all parts of the country, excepting Scotland, during the past fortnight has hardly been of a type suitable to the well-being of Dahlias. The soil has been much too dry, and the sunshine too hot and exhausting, for such cool and moisture-loving plants. But the gardener is more fortunate than the farmer in being able to somewhat mitigate such circumstances by artificial waterings and in instances where flowers are being cultivated for exhibition purposes, by the use of shades that preserve them from the colour deterioration they would suffer if exposed to the full rays of the sun. The annual show of the National Dahlia Society, however, that has just been opened at the Crystal Palace as these pages are sent to press is nearly, but not quite so full as that of last year, and the quality of the blooms quite as good as was expected.

The two nurserymen's classes for "show" Dahlias were for 48 blooms, distinct, and 24 blooms, distinct, the winner in the former class being Mr. S. MORTIMER, Rowledge Nurseries, Farnham, and he was followed by Mr. W. TRESEDER, Cardiff. The class for 24 blooms was won by Mr. GEORGE HUMPHRIES, Kington Langley, Chippenham.

In the classes for fancy varieties, the best exhibit of 18 blooms, distinct, was shown by Mr. J. WALKER Thame, Oxon, and he was followed by Mr. W. TRESEDER. Mr. GEORGE HUMPHRIES had the 1st prize for 12 blooms.

It is in the competitions for Cactus varieties that exhibitors show greatest interest, and visitors find effects most to be admired. The silver Challenge Cup, value £15 15s., was awarded with the 1st prize for the best collection of 18 varieties in bunches of six blooms each, and the fortunate winners were Messrs. J. STREDWICK & SONS, Silverhill Park Nurseries, St. Leonards, followed by Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge. Mr. JNO. WALKER won the 1st prize for 12 varieties in bunches of six blooms each, and the class for 48 blooms, distinct, was won by Messrs. STREDWICK & SONS, the 2nd prize being awarded to Messrs. KEYNES, WILLIAMS & Co., Salisbury.

The best collection of 12 Pompon Dahlias was shown by Mr. J. WALKER, and the best exhibit of 24 varieties of single Dahlias, which are always amongst the most beautiful, was from Mr. M. V. SEALE, Sevenoaks.

In the AMATEURS' section a silver challenge cup, value £5 5s., was awarded with the 1st prize for the best exhibit of 24 blooms of distinct varieties of "show" or "fancy" Dahlias or the types intermixed. This class was won by Mr. TOM JONES, Bryn-pen-y-lan, Ruabon, who likewise exhibited the best collection of 12 "show" blooms, distinct varieties.

Class 21 was an important one, in which a silver challenge cup value £10 10s. was awarded to the Rev. ARTHUR BRIDGE, Worth Rectory, Crawley, for the best collection of nine varieties of Cactus Dahlia in bunches of three blooms each.

The above were some of the more interesting competitions.

GARDENERS' DEBATING SOCIETIES.

BATH GARDENERS'.—A supplementary excursion to the recent successful outing of the above society was arranged for the under-gardeners and members who could not join in the previous one. The outing, which took place on Thursday, August 23, was to Longleat and Frome. The party was met at Longleat by Mr. Gandy, Head Gardener to the Marquis of Bath, and he conducted them through the garden and grounds. The party next journeyed to Frome, where they were met by other members who had travelled by special motor. Mr. Iggulden, of Frome, gave the party a hearty welcome and conducted them through his nursery. Two large vineries of Gros Colmar Grapes were much admired. *L. A.*

CRAWLEY AND DISTRICT GARDENERS'.—The third annual exhibition of this society was held at The Elms, Crawley, the weather being perfect. Mrs. Messel, Nymans, Handcross, opened the exhibition at 2 p.m., being introduced to the company by the president, Mr. Jos. Cheal. The quality of the exhibits generally was very good. Mr. H. Hemsley and Mr. R. H. Holton fulfilled the offices of honorary secretaries, and the thanks of all concerned are due to them and to the committee for the success attending the show. The chief awards made were:—Mr. E. Neal (gr. to John A. Nix, Esq., Tilgate), was awarded a Gold Medal for a group of plants and a collection of fruit, the same honour being granted Mr. A. B. Wadds (gr. to Sir Weetman D. Pearson, Bart., M.P., Paddockhurst, Worth), for a group of plants and 50 dishes of Apples, and to Mr. J. Martin (gr. to P. Saillard, Buchan Hill, Crawley), for a group of plants and collection of Fruit; Mr. J. Comber (gr. to L. Messel, Nymans, Handcross), won a Silver-Gilt Medal for a choice collection of fruit; and medals of the same value were also awarded Mr. W. Shepherd (gr. to H. Hobson Finch, Esq., Goff Hill, Crawley), for a group of plants and a collection of fruit; to Mr. C. Daisley (gr. to Rev. A. Bridge, Worth Rectory), for a collection of vegetables; to Mr. J. White (gr. to Mrs. J. Goddard, The Elms, Crawley), for a group of plants, and to Mr. H. Brookes (gr. to Miss Rawson, Deerswood, Ifield), for a group of plants and a collection of fruits. Silver Medals were awarded Mr. J. Guyatt (gr. to F. L. Charles, Esq., Timberham, Lowfield Heath), for a collection of vegetables; Mr. W. Dowsett (gr. to V. Silberberg, Esq., The Manor House, Crawley), for collections of fruits, flowers, and vegetables; Mr. H. Wilkins (gr. to Alfred Beyfus, Esq., Lovell Lodge, Lowfield Heath), for a group of Cactus Dahlias, &c.; Mr. E. Seymour (gr. to C. Fox, Esq., The Old Rectory, Ifield), for a group of Begonias; and to Mr. W. Wilks (gr. to Major Nelson George, Lovell House, Lowfield Heath), for a collection of plants and fruit. Medals were also awarded in the amateurs' and cottagers' sections for best kept gardens. Messrs. J. Cheal & Sons, Lowfield Heath, had a non-competitive exhibit of Cactus, single and Pompon Dahlias, and cut flowering trees and shrubs, which were greatly admired, they also had on view several plans and sketches showing the formation of new grounds and gardens. Mr. Robt. Neal, Bonnett's Nursery, put up a choice exhibit of hardy flowers and Roses. All surplus profits from the exhibition are to be divided between the Royal Gardeners' Orphan Fund, and the Crawley Cottage Hospital.

MARKETS.

COVENT GARDEN, September 5.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Asters, p. dz, bchs.	1 6– 2 6	
Calla æthiopica, per dozen	2 6– 4 0	
Centaurea cyanus, doz. bunches..	1 0– 2 0	
— suaveolens ...	3 0– 4 0	
Coreopsis grandiflora, per doz. bunches ...	1 6 2 0	
Carnations, per dozen blooms, best American various ...	1 6– 3 0	
— smaller, per doz. bunches	1 0– 2 6	
— Malmaisons ...	3 0– 8 0	
Cattleyas, per doz. blooms ...	9 0–12 0	
Chrysanthemums, per dz. blooms	1 0– 2 6	
— small blooms, per doz. bnchs.	3 0– 6 0	
Eucharis grandiflora, per doz. blooms... ...	3 0– 4 0	
Gardenias, per doz. blooms... ...	1 6– 2 0	
Gladiolus, various, per dz. bnchs..	9 0–12 0	
— The Bride ...	3 0– 4 0	
— Brenchleyensis, per doz. spikes	1 0 2 0	
Gypsophila elegans, per doz. bunches	2 0– 3 0	
— paniculata ...	2 6– 4 0	
Gaillardias ...	2 0– 3 0	
Heather, white, pr. doz. bunches...	3 0– 6 0	
purple... ...	2 0– 3 0	
Lilium auratum ...	2 0– 3 0	
— candidum, per bunch	1 6– 2 0	
— lancifolium, rubrum and album	1 6– 2 0	
— tigrinum, per bunch ..	1 6– 2 0	
— longiflorum ..	1 6– 2 6	
Lily of the Valley, p. dz. bunches	6 0– 9 0	
— extra quality ...	9 0–12 0	
Marguerites, white, p. dz. bunches	2 0– 3 0	
— yellow, per dz. bunches ...	2 0– 3 0	
Mignonette, dozen bunches ...	2 0 3 0	
Montbretia, dozen	2 0– 3 0	
Odontoglossum crispum, per dozen blooms	2 6– 3 0	
Pancratiums, doz. fls.	2 0– 3 0	
Pelargoniums, show, per doz. bunches	3 0– 5 0	
— Zonal, double scarlet... ...	3 0– 4 0	
Poppies (Iceland), per dz. bnchs.	1 0 2 0	
Pyrethrums, dozen bunches	1 6– 2 6	
Roses, 12 blooms, Niphetos ...	1 0– 2 0	
— Bridesmaid ...	1 0– 1 6	
— Kaiserin A. Victoria ...	1 0– 2 0	
— Caroline Testout	1 0– 2 0	
— C. Mermet ...	1 0– 1 8	
— General Jacqueminot	1 0– 1 6	
— in bunches, per dozen	2 0 4 0	
— Liberty ..	1 0– 2 0	
— Madame Chatenay	1 0– 2 6	
— Mrs. J. Laing	1 0– 2 6	
— from the open, various kinds, per dz. bnchs.	2 0– 5 0	
Scabiosa, per doz. bunches ...	2 0– 3 0	
Statice, per dozen bunches ...	4 0 6 0	
Stephanotis, per dozen trusses	3 0– 5 0	
Stocks (double white) per doz. bunches ...	2 0 4 0	
Sweet Peas, per doz. bunches ..	1 0 3 0	

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Asparagus plumosus, long trails, per doz.	5 0 10 0	
— — medium, bunch ...	1 6– 2 0	
— —short sprays per bunch...	0 6– 0 9	
— Sprengeri ...	0 6– 1 0	
Adiantum cuneatum, doz. bun.	4 0– 6 0	
Berberis, p. bunch	2 6– 3 0	
Croton leaves, per bunch	1 0– 1 6	
Cycas leaves, each	1 6– 2 0	
Fern, English, p. dozen bunches	0 9– 1 6	
Fern (French), doz. bunches ..	2 0– 5 0	
Hardy foliage (various), per dozen bunches	2 0– 3 0	
Hardy Grasses, per doz. bunches..	2 0 3 0	
Ivy-leaves, bronze	1 6– 2 0	
— long trails per bundle... ..	1 0– 2 0	
— short green, doz. bunches...	2 0– 3 0	
Moss, per gross ...	4 0– 5 0	
Myrtle, per dozen bunches ...	2 0– 5 0	
Smilax, p. dz. trails	2 0– 5 0	

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

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0– 8 0	
Aralia Sieboldi, per dozen ...	4 0– 6 0	
— larger	9 0–12 0	
Araucaria excelsa, per dozen ...	12 0–30 0	
Aspidistras, green, per dozen ...	18 0–30 0	
— variegated, per dozen	30 0–42 0	
Asparagus plumosus nanus, doz.	6 0– 9 0	
— Sprengeri, doz.	6 0– 8 0	
— tenuissimus per dozen ...	8 0–10 0	
Asters, per dozen	3 0– 6 0	
Begonias (tuberous), per dozen	4 0– 5 0	
Bouvardias, per dozen	6 0– 8 0	
Campanula isophylla alba, per dozen ...	4 0– 6 0	
— Mayi	4 0– 6 0	
Chrysanthemums, best	12 0–24 0	
— smaller ...	5 0– 8 0	
— segetum ...	3 0– 6 0	
Clematis, per doz.	8 0– 9 0	
— in flower ...	18 0–24 0	
Cocos Weddelliana, per dozen	9 0–18 0	
Coleus	3 0– 5 0	
Coreopsis ...	4 0– 6 0	
Crotons, per dozen	12 0–30 0	
Cyperus alternifolius, dozen ..	4 0– 5 0	
— laxus, per doz	4 0– 5 0	
Dracænas, per doz.	9 0–24 0	
Euonymus, per dozen	4 0– 9 0	
Ferns, in thumbs, per 100... ...	7 0–10 0	
— in small and large 60's ..	16 0–25 0	
— in 48's, per dozen	4 0–10 0	
— in 32's, per dozen	10 0–18 0	
Ficus elastica, per dozen	9 0–18 0	
— repens, per doz.	4 0– 6 0	
Fuchsias, per doz.	4 0– 6 0	
Hydrangea Hortensia, per dozen	8 0–18 0	
— paniculata	6 0–18 0	
Kentia Belmoreana, per dozen	12 0–18 0	
— Forsteriana, per dozen ...	12 0–21 0	
Latania borbonica, per dozen	12 0–18 0	
Lilium auratum ..	18 0–24 0	
— longiflorum, per dozen	12 0–18 0	
— lancifolium, per dozen	18 0 24 0	

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

	s.d.	s.d.
Lily of the Valley, per dozen ...	18 0–30 0	
Marguerites, white, per dozen	4 0– 8 0	
Pelargoniums (Zonals), p. dz.	3 0– 5 0	
— Ivy-leaved, per dozen	5 0– 8 0	
Rhodanthe, per dz.	3 0– 5 0	
Roses, per dozen ..	12 0–18 0	
Selaginella, dozen	4 0– 6 0	
Spiræa japonica, per dozen ...	6 0–10 0	
Verbena Miss Willmott, per doz .	4 0– 6 0	

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (English), ½ sieve... ...	1 6– 4 6	
— English, p. bbl.	2 6– 5 0	
Apricots (French), per box ...	1 0– 1 9	
— ½ sieve	10 0 —	
Bananas, bunch:		
— No. 1 quality...	6 6– 7 6	
— No. 2 quality...	5 6 6 6	
— Extra quality...	8 0– 8 6	
— Giants, per bunch	9 6–10 6	
— Jamaica ..	4 6– 6 0	
— Loose, per dz.	0 8– 1 3	
Blackberries, peck	4 0 —	
Currants (English), — black, ½ sieve .	7 6– 8 6	
— English pecks	3 0– 3 6	
— ½ sieve, Red .	4 0– 4 6	
Damsons, ½ sieve	5 0– 6 0	
Figs, per dozen ..	1 0– 3 0	
Granadilla, per dz.	3 6 —	
Grape Fruit, case	18 0 —	
Grapes (English), - Alnwick Seedling, per lb. ...	1 6 —	
— Madresfield, per lb.	2 0 —	
— Maroc, per lb.	1 9 2 0	
— Black Hambro, per lb.	0 6 1 6	
— Alicante, p. lb.	0 9– 1 4	
— Colmars, p. lb.	0 10 1 6	
— English, Muscat, per lb. ...	1 0– 2 0	
— Lisbon, cases..	6 6– 9 0	
Greengages (French, p.box	1 10– 2 0	
— French, ½ sieve	1 6– 5 6	
— ,, ¼ sieve	5 6 —	
Lemons: — Messina, case	18 0 20 0	
- Naples, p. case	30 0 60 0	
Lychees, per box.	0 10– 1 0	
Melons, each ..	1 0– 2 0	
— Valencia, case	4 6– 8 6	
— Rock	2 0– 3 6	
Nectarines, English	6 0–18 0	
Nuts, Cobnuts, per doz. lb... ...	5 0 6 0	
— Brazils, new, per cwt.	45 0 —	
— Spanish, p. bag	42 0 43 0	
— Barcelona, per bag	24 6 —	
— Monkey Nuts, per bag ...	18 0 —	
— Walnuts, dried, cwt.	35 0 —	
— Chestnuts, Italian, per bag ...	13 6–15 0	
— Cocoanuts, 100	10 6–13 6	
Oranges, per case: — Murcia ...	16 0–18 0	
Peaches (English), per dozen ...	4 0–18 0	
— boxes	1 0– 2 0	
Pears (English), ½ sieve	3 0– 5 0	
— English, bushel	5 0 6 0	
— French, Williams, boxes ..	4 0 —	
— French, Williams, crates ..	7 0 8 6	
— Cahtorman, pr. case	6 0– 8 0	
Pineapples, each...	2 0– 3 0	
Plums (English), ½ sieve	4 0– 7 6	
— French, box ..	0 8 1 3	
— French, ½ sieve	2 6 3 6	
— Cahfornian, boxes	6 0 10 0	
Raspberries, per punt. .. .	0 4– 0 6	
— per peck .	2 0 3 0	

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Beans, Broad (English), per bush.	2 0	
- Home grown, per bushel ...	2 6	
Beetroot, bushel	1 0	
Cabbages, per bag	2 6	
— red, per bushel	1 6– 2 0	
Carrots, French pad	3 0	
— per bag, unwashed	3 0	
Cauliflowers, per tally ...	5 0	
Chow Chow, p. dz.	1 6– 2 0	
Cucumbers, p. flat, 2½ dozen ...	7 0	
— 3 dozen, small	5 0 6 0	
— per dozen ..	2 6 3 6	
Endive, per dozen	1 8 2 0	
Horseradish, tor-eugn, per dozen bundles .	2 1 0	
Indian Corn, dozen	1 0	
Leeks, 12 bundles	1 6 3 0	
Lettuces, Cos, per dozen	1 3 -	
Marrows, per tally	2 0	
Mint, per dozen ...	2 0 3 0	
Mushrooms (house) per lb.	0 6 1 6	
— Buttons, per lb	0 9 1 3	
Mustard and Cress, per dozen pun.	1 0– 1 6	
Onions (Valencia), case	6 0– 7 0	
— Egyptian, bags..	4 6– 5 0	
— picking, per bushel. ...	2 0 —	
— French, ½ bags..	2 3 —	
Parsley, 12 bunches	1 0 1 6	
— bushel .	2 6 —	
Salsafy, per dozen bundles ..	4 0 —	
Tomatos: — English, per 12 lbs. ...	2 0 2 6	
small, selected per 12 lbs.	2 0 —	
Seconds, per 12 lbs. .	1 0– 1 3	
- outdoor, per 12 lbs. ...	2 0 —	
- French, per crate	2 6– 3 6	
Turnips, per doz bunches	1 0– 1 6	
— bags ..	3 0 —	
Turnip Tops, per bushel	1 0– 1 6	
Watercress, per doz. bunches	0 6 -	

REMARKS.—Tomatos, both outside and indoor grown, are a very heavy supply with prices ruling low. Mushrooms have been scarce owing to the dry weather. Apples are very plentiful. English Plums are nearly over, and supplies from California are furnishing dessert varieties. Melons, both English and foreign, are very plentiful. Peaches are now a short supply. Supplies of Nectarines are nearly over. Consignments of vegetables are very short indeed, owing to the dry season. Trade generally is improving. *E. H. Rides, Covent Garden, Wednesday, September 5, 1906.*

POTATOS.

Large supplies of Potatos are still coming from all districts, and trade is very dull. Lincolns, 55s. to 65s.; Bedfords, 60s. to 65s.; Kents, 70s. to 80s., Blacklands, 55s. to 60s. *John Bath, 32 and 34, Wellington Street, Covent Garden*

COVENT GARDEN FLOWER MARKET

I have never before seen so many empty stands. Flowering plants are a short supply, that is of really first-class material. Asters of fairly good quality are seen, but there are many that would not satisfy the best florists. Chrysanthemums vary considerably, some are very good and make satisfactory prices. Two distinct types of these plants are forthcoming, those that have been disbudded and well finished, which always make good prices, and those from plants from the ground and potted, but these latter are of little value. In quoting prices, there may appear much difference, but while the best make from 18s. to 24s. per dozen, many inferior ones are sold at from 4s. to 6s. per dozen, or perhaps less. Good Zonal Pelargoniums can be had; the Ivy-leaved and show varieties are now practically over for the season. Good white Marguerites can be had, but there is none of the yellow kind. Liliums do not sell well; Zinnia elegans double variety is good. Supplies of Campanulas are now nearly finished. Bouvardias are not of very good quality. Spiræa japonica is seen in well-grown plants; there are also some well-flowered specimens of Rose Madame Levavasseur. Ferns, Palms and other foliage plants are well supplied, and may be bought at very low prices. Kochia scoparia comes from several growers. The other day I saw the two sorts growing together; the one received from a Continental firm as K. scoparia is not worth growing, but this firm also sells the desirable variety, under the name of K. trichophila. Hawkers have been doing a big trade with these plants in the suburbs.

CUT FLOWERS.

There is quite a glut of Asters, and though fresh blooms of good quality may make good prices, many are cleared at about 1s. per dozen bunches, or for perhaps even less. Chrysanthemums are over-plentiful. The same remark applies to cut Chrysanthemum flowers as with pot plants, and it is most difficult to give even approximate prices. Very fine blooms may be bought at 1s. 6d. to 2s. 6d. per dozen others are sold at about the same prices per dozen bunches. Liliums are good and plentiful and prices which vary from day to day are low. They were fetching just double the price last Saturday to what they realised on the same day of the previous week, but they were cheaper again this morning. Roses of good quality were offered at very low prices, and it is quite impossible to sell blooms of second quality. Supplies of Carnations are also over-done. The American varieties are very good. Dahlias are seen in large quantities, but Asters and Chrysanthemums being over-plentiful. Dahlias can scarcely pay for their cutting. Physalis Franchetti and Viburnum Opulus (the Guelder Rose) with red berries and red-tinted foliage are very pretty. The white and the purple Scotch Heather sell freely. Asparagus, Smilax and other foliage is over-plentiful and their prices are low. *A. H., Covent Garden, Wednesday, September 5, 1906.*

CATALOGUES RECEIVED.

BULBS, ETC.

ARTHUR ROBINSON, 1a, Bishopsgate Without, City.
HORSNAILL & REYNOLDS, 13 & 15, High Street, Rochester.
HERD BROS., Penrith.
SMITH & SIMONS, The Nurseries, Kennishead, Glasgow.
EDMONDSON BROS., 10, Dame Street, Dublin.
ROBERT VEITCH & SONS, 54, High Street, Exeter.
BARR & SONS, King Street, Covent Garden, London, W.C.
W. SMITH & SONS, 18, Market Street, Aberdeen, N.B.

MISCELLANEOUS.

WALTERS & Co., 16, Water Lane, Great Tower Street, London, E.C.—Trellis Work, Pergolas, Arches, &c.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Two record temperatures. On five consecutive days during the past week the temperature in the thermometer screen rose respectively to 83°, 92°, 91°, 92½°, and 87°. Both 92° and 92½° are higher than any shade temperatures that I have previously recorded here at any period of the year. The nights, on the other hand, were only a few degrees warmer than is usual at this season; consequently the range in temperature was very great. On one day the difference between the lowest and highest readings of the thermometer screen amounted to 40°, which is the greatest range in any one day of August of which I have here any record. On the 3rd inst. the ground at 2 feet deep was 5°, and at 1 foot deep as much as 9° warmer than is seasonable. A tenth of an inch of rain fell on the night of the 4th, but previous to this the weather had been perfectly dry for ten days. No rain-water has now come through the bare soil percolation gauge for over five weeks. On the first six days of the week the sun shone on an average for 11 hours a day, or for 5½ hours a day longer than usual. Calms and light airs alone prevailed. The mean amount of moisture in the air at 3 o'clock in the afternoon fell short of a seasonable quantity for that hour by no less than 26 per cent. On the 2nd the air was drier than I have ever known it here at any period of the year, the difference between the wet and dry bulb thermometers amounting to 25° at 3 p.m.

AUGUST.

An exceptionally hot, dry and sunny month. During the 20 years over which my observations at Berkhamsted extend there has been only one warmer August, and that was in 1899. On the 31st the temperature in the thermometer screen rose to 92°—making this the hottest day that I have yet recorded here in August, or indeed in any other summer month. However, since September began a slightly higher reading has been recorded. As showing the comparative coldness of the nights at this period it may be stated that only two nights previously the thermometer exposed on the lawn fell to within 2° of the freezing-point a remarkably low reading for the time of year. The great range in temperature during the last few days is shown by the fact that on one day the difference between the highest and lowest readings in the thermometer screen amounted to as much as 40° or a greater daily range than in any previous August. Rain fell on but nine days, while the total fall amounted to less than a third of the average rainfall for the month, and was smaller than in any August for 26 years. No rain-water at all came through either of the percolation gauges during the month. The sun shone on an average for 7¾ hours a day, or for as much as 1¾ hour a day longer than usual. Calms and light airs mostly prevailed, but on one or two days the wind was rather high. In no hour, however, did the mean velocity exceed 18 miles. The atmosphere continued singularly dry, the mean amount of moisture in the air at 3 p.m. falling short of the average by as much as eight per cent. On one day the difference between the readings of the wet and dry bulb thermometers at 3 p.m. was 21°—indicating a degree of dryness which has only once before been exceeded during the month of August in the last 20 years.

THE SUMMER.

Taken as a whole this was a very warm summer, but only in August was the heat very exceptional. It proved also a very dry season. June was a wet month, but taking July and August together there was a deficiency in rainfall of 3¾ inches—equivalent to a loss of 16 gallons on each square yard of surface in my garden. There was a plentiful record of sunshine in all three months, the total exceeding the average for the season by 1½ hour a day. *E. M., Berkhamsted, September 5, 1906.*

Obituary.

G. W. LAW-SCHOFIELD.—News has reached us of the death on September 1 of that enthusiastic cultivator of Orchids G. W. Law-Schofield, Esq., New-Hall-Hey, Rawtenstall, Manchester. Mr. Law-Schofield, who was one of the leading growers in the Manchester district, and whose fine productions often appeared at the Royal Horticultual Society's meetings, has suffered from declining health for the last two or three years, but took great interest in his Orchids to the last. In our issue of June 2 last, p. 339, we gave an illustration of his Odontoglossum crispum "G. W. Law-Schofield," which the deceased gentleman considered his best Odontoglossum.

ANSWERS TO CORRESPONDENTS.

AGRICULTURAL COLLEGES: *A. E. K.* You had better apply to the authorities at each college for information upon the literature they distribute.

AMPELOPSIS: *F. B.* The agent's action was unjustifiably arbitrary. Whether he had a right to cut down the plant would depend upon the circumstances which are unknown to us. Consult a solicitor.

ASTERS: *J. K. M.* The Asters may have suffered from a fungous disease or the rotting may be due to an excessive degree of wet. The millipedes sent us are in the habit of feeding upon decaying vegetable tissue, and we do not think they have caused the mischief.

BEAN: *P. M.* One of the coloured varieties of continental origin, probably Firefly.

CARNATION SEEDLINGS: *W. P. C.* None of the varieties is of special merit.

CELERY: *H. S.* The cause of injury is a minute fungus, Cercospora apii. This is a difficult pest to combat, and spraying with Bordeaux mixture is the only known preventive.

CHRYSANTHEMUM LEAVES: *W. B.* The disease is a leaf blight due to the fungus called Cylindrosporium Chrysanthemi. Spray with potassium sulphide every four days at the strength of 1 ounce to 3 gallons of water. The use of liquid manure greatly favours the disease.

CUCUMBERS: *Homeland.* The plants have been killed by over-feeding. Leave out the kainit and reduce the other substances by one half until the plants recover, as those may do that are not yet seriously injured. *J. D.* The plants are attacked with the "spot" disease, Cercospora melonis, that has been repeatedly described in our columns. Burn all the affected leaves and spray the remaining ones with liver of sulphur—½ ounce to a gallon of water, taking care not to wet the paint on the woodwork of the house. Use the same precautions at the end of the season as are recommended *J. H.* for eelworm in Melons.

DAHLIA CLASS: *F. C. S.*—The schedule is loosely worded. If we were to try to determine what was intended by the words "18 Dahlia blooms, Cactus varieties, double, 12 distinct varieties, to be shown in vases" we should probably conclude that it was intended that not fewer than twelve distinct varieties would be permitted, for if exhibitors were limited to twelve varieties and no more, why have eighteen blooms? But the judges had not to do this, they had simply to see that the exhibit was in accordance with the "letter" of the schedule. As the schedule said twelve distinct varieties were to be shown, but did not limit the number to twelve, the exhibitor who had fifteen varieties should certainly not be disqualified, whether the intentions of the compilers of the schedule were what we surmise them to have been or not.

GRAPES: *Constant Reader.* We are unable to find any disease in your specimens, and are inclined to think there is something lacking in the cultivation afforded the Vines.—*E. Y. B.* The foliage distinguished as Number 1 is disfigured by sun-scorching, and is not affected by any disease. Ventilate the house more freely and earlier in the day. The leaves marked Number 2 showed small warts or intumescence on the under side. This is due to there being something wanting in the proportion of heat and moisture of atmosphere and border. The condition will not seriously affect the Vines. The berries received appear to have slight indications of a disease known as anthracnose, but we should like to have further specimens.—*L. G. R.* We cannot offer any advice unless specimens are sent us for examination.—*A. J. C. & A. W.* The bunches are badly "shanked" and some of the berries are diseased with the "spot" fungus. Shanking is usually the result of some defect in the border which prevents the roots from properly performing their functions and thus the vines receive a check. See to the borders in the autumn and put them and the drainage material in a proper condition. Avoid overcropping the vines and thin out the growths. The berries that are marked with a depression should be cut out and burned, and the vines be sprayed next spring with potassium sulphide, ½ ounce to one gallon of water. Be careful that the liquid does not reach the paint, which it would turn black.—*W. S., Low Wood Hall.* You have evidently got an epidemic of Botrytis cinerea, which strongly suggests that there is a lack of ventilation in the house early in the day, as this fungus only infects leaves or fruit during the early part of the morning, and when there is a certain amount of moisture on the surface of the parts attacked. Spray with a rosy-red solution of Condy's Fluid to check the spread of the fungus.

IVY-LEAVED PELARGONIUM: *R. F.* The injury is caused by caterpillars. Examine the foliage at night. You might syringe the plants with a solution of Quassia Extract in water.

MALFORMED BEGONIA: *G. N.* Many thanks. We have seen similar instances.

MELON ROOT: *J. H.* The clubbing is caused by a very bad attack of eelworm. You should remove and burn all particles of the roots and stems of the plants when you have harvested the crop, and thoroughly sterilise, by baking, the soil in which they have been grown. This soil should not be mixed with the old potting loam, but had better be placed in some distant part of the garden. In the autumn thoroughly cleanse the house, using water with a little carbolic acid (POISON) in it. Do not grow Melons or Cucumbers in the same house for a season or two afterwards, if another house can be utilised for the purpose.

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

R. W. 2, Jargonelle; 5, Fondante de Cuerne. We cannot name the other fruits, for they are small and ill-developed.—*A. S.* Red Astrachan.—*A. W.* 6, Beauty of Bath.—*Pinehurst.* Calville Rouge Précoce.—*Milford.* 1, Clapp's Favourite; 2, Fondante de Cuerne; 3, Lord Suffield; 4, Hormead's Pearmain; 5, New Hawthornden; 6, Lord Grosvenor; 7, Keswick Codlin.

NAMES OF PLANTS: *H. N.* Mesembryanthemum species, but which one cannot be determined from the flower received.—*W. H.* 1, Echinops Ritro; 2, Helianthus divaricatus; 3, Buphthalmum speciosum; 4, Chrysanthemum Parthenium var. fl. pl.; 5, Rudbeckia speciosa; 6, Helianthus laetiflorus.—*A. W.* 1, Philadelphus grandiflorus; 2, Fraxinus sp.; 3, Phillyrea decora; 4, Cotoneaster frigida; 5, Symphoricarpus orbiculatus variegatus. Another time send the specimens when they are in flower.—*A. C. J.* 1, Solidago Virgaurea; 2, Teucrium fruticans; 3, Kerria japonica; 4, Daphne mezereum; 5, Forsythia viridissima; 6, Ercilla volubilis.—*W. K.* 1, Leucothoe Catesbæi; 2, Danaë Laurus (Alexandrian Laurel).—*Monrath.* Urospermum Dalechampii and Gaultheria trichophylla.—*A. D. W.* Acer Pseudo-platanus var. purpureum.—*L. H.* 1, Solanum, probably S. Fontanesianum; 2, Campanula isophylla.—*G. Chad.* 1, Solanum capsicastrum; 2, Daphne odorata; 3, probably Erica hyemalis; 4, Acacia armata; 5, Erica, send when in flower; 6, Euphorbia (Poinsettia) pulcherrima; 7, Eurya latifolia variegata; 8, Cassia corymbosa; 9, Abutilon Savitzii; 10, probably Salvia, send flowers; 11, Zebrina pendula (Tradescantia zebrina of gardens); 12, Achimenes, send when in flower; 13, Ophismenus Burmanni variegata or Panicum variegatum of gardens.—*Alpha.* Crinum Moorei. It is well represented in gardens, and is not an expensive bulb.—*W. C. M.* Statice sinuata; a half-hardy herbaceous plant.

NECTARINES SHRIVELLING: *C. B.* The stone has formed well enough but the trouble complained of has been caused by the fruits having been wetted when exposed to the sun's full rays, with the result that they have become scalded. The injury thus sustained would be quite sufficient to account for their dropping prematurely. No doubt an excess of moisture on the growths with insufficient ventilation was largely the cause of the mildew appearing on the plants earlier in the season.

PEAR TREE: *C. S. & S.* What you have described as silvery grey scales are the coverings made by some insect to protect its eggs. The "louse-like scales" are the pupæ cases of one of the "snowy flies" belonging to the genus Aleyrodes, from which the perfect insects (the small white flies which were seen flying away) had emerged. The "silvery scales" had nothing to do with the snowy flies. If the tree is attacked by the snowy flies next year, spray it with paraffin emulsion.

THE NURSERY BUSINESS: *H. J. M.* We cannot recommend you to commence a business the practical details of which are absolutely unknown to you. It is true that many have succeeded in like circumstances, but in such cases the success has been due to the honesty and business capacity of the manager who has directed the work rather than the financier. Your letter is sufficient evidence of your business-like character, but we think you and your friend also would be well advised to obtain a situation, for twelve months at least, in a first-rate nursery business of the type you wish to establish.

TOMATO FRUITS: *T. B. A.* These are badly attacked by the "Black Spot" fungus (Cladosporium lycopersici). Remove all fruits similarly attacked and burn them. Spray the plants at frequent intervals with potassium sulphide, in the proportion of one ounce of potassium sulphide to two and a half gallons of water. See illustration in *The Calendar of Garden Operations*, which may be obtained from the publisher of this journal, price 7½d. post free.—*A. S. & Son.*—The diseased plants should be uprooted and burned. The hard, discoloured patches in fruits obtained from other plants are caused by a lack of one of the necessary food elements in the soil. Furnish the plants with some manure that is rich in potash.

VIOLETS DISEASED: *Anxious.* The leaves are injured by the Violet disease, caused by a fungus Ascochyta violae. This has often been described in our columns. The best plan is to burn the old plants and obtain new stock from a healthy source, taking care not to plant in the same soil again. The flower you enclose is Mimulus (Diplacus) glutinosus.

WEEPING ASH: *B. R. D. & S.* The insect on Ash is the common ashbark scale (Chionaspis fraxini). It is a common and widely distributed species and is sometimes injurious to "osiers," but we have never known it to cause the death of a tree or affect the foliage in the manner that the leaves received from you have suffered. We think that the leaves are attacked by a fungus which is the real cause of the disease, but will further examine them. The scale may be easily eradicated; make an application of paraffin emulsion by means of a scrubbing brush to the stem and main branches where the scale is probably most numerous.

COMMUNICATIONS RECEIVED.—G. B. (your donation of one shilling has been handed to the Gardeners' Royal Benevolent Institution)—A. J. F.—F. A. T.—H. W.—W. E. L.—J. M.—B. T. A. (Tomatos not yet received)—W. G. S.—C. A. B.—Miss R.—Miss C.—G. B.—T. F.—J. C. Houghton & Co.—A. G.—L. Gentil—R. T. H.—Doubtful (next week)—F. W. Moore (many thanks)—G. Massee—E. H. J.—F. M.—A. H.—W. H. C.—S. A.—F. Bonnett—F. Matthews—J. D. J.—C. T. D.—J. W.—S. W. F.—W. J. B.—A. B.—R. L. H.—G. B. M.—W. Pacey—J. Mawley—E. H. W.—J. Frinson—W. G. S.—E. Molyneux.

CAMPANULA LACINIATA, HARDY PERENNIAL PLANT, FLOWERS PALE BLUE.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE

Gardeners' Chronicle

No. 1,029.—SATURDAY, September 15, 1906.

CONTENTS.

ILLUSTRATIONS.

FRUIT GROWING IN CANADA.

THE Editor, in his remarks in the issue for July 28, seems to suggest that hybridists and cultivators should persevere more in the raising of late-flowering varieties, and endeavour to secure more sheltered situations on which to plant their orchards. The latter subject might perhaps be given more careful attention, but the choice of a site is very difficult. We often find an exposed situation, especially if it is of good elevation, more successful than a lower one with shelter, and this year it has been very much the case in this locality. As regards late-flowering varieties, such as Court pendu-plat, I have no great faith; they would, of course, have a shorter season of summer weather in which to ripen their fruits. For my own part, I would prefer to keep the varieties we have, and hope rather for some mitigation of cold during the months of April and May. Judging from what has been done in the past, scientists may reasonably be expected to do a great deal more, and we are loth to give up hope that in their respective laboratories someone may be fortunate enough to discover a clue, which may lead to giving us complete immunity from the vagaries of those frequent and destructive spring frosts.

But whilst these problematic improvements are still *in nubibus*, are we to wait cavilling over where to plant, whether we should root-prune, top-prune, summer-prune, pinch, winter-prune, or for the arrival of some long-looked-for and wished-for panacea which will carry us safely through all our pomological difficulties? Whilst we are waiting for all these much-hoped-for Utopian evolutions to come about, with often years of consecutive failures in between, our trans-Atlantic American and Canadian kinsmen, with their unlimited land areas, climatically and terrestrially adapted for high-class fruit cultivation, are extending their plantations with almost magical quickness, are pouring their fruits into our markets in unlimited quantities, for which they carry away heaps of our money, whilst we are compelled, helplessly, to stand by and see the gold flowing out of our country.

Were I a young man with the world before me, and had made up my mind to be a fruit grower, I would betake myself to one or other of those well-known fruit-growing countries, of which there are great choice, when fruits of many varieties can be grown with certain results. I have sent several young fellows to America and some to Canada, and all have done well.

The only difficulty that I am aware of which prevents others making up their mind to go is in the foolish reluctance of "cutting the painter" between the old country and friends they would leave behind. This is more imaginary than real, for in these days of quick, comfortable, and cheap passages an occasional home-coming is not beyond easy attainment; some of my friends, with their families, have been home and gone back again. Those who cannot make up their minds to go must just stay at home and continue to swell the ranks of the great unemployed, or of the miserably remunerated legions of gardeners waiting for appointments which may never turn up. One thing may be accepted as certain, namely, that there are not places for all those who are expectingly waiting for them. When a young man realises the truth of these facts and seriously considers the infinitely small chance he has of ever getting anything in this country worth waiting the best part of a lifetime for, he will then be in a position to think what he had better do with himself.

I have a little book before me, which has for its title "3,800 Miles Across Canada." It is written by J. W. C. Haldane, who graphically and instructively describes the country; it also has an excellent map, showing the country all the way through from Newfoundland in the Atlantic to Vancouver in the Pacific. This book is liberally illustrated, and so well describes the resources of the country to all whom it may concern, that anyone desirous of going thither would do well to provide himself with a copy.

Although Canada has its well-known fruit-growing belt, or zone, extending from the east side of the Dominion to that of the west, yet there are some provinces more highly favoured than others, and such an one is Ontario, of which Mr. Haldane gives the following description:—"Ontario forming as it does the very heart of the Dominion, its progress, wealth, and population entitle it to be recognised as the most important of them all. Its area is 220,000 square miles, or 78,000 more than that of the British Isles. To many it may appear strange that in a climate supposed to be so cold in winter as the adjacent Niagara district, fruit-growing on a gigantic scale could be carried on, yet so it is. Not only are Peaches, Grapes, Apples, Pears, Plums, &c., produced in enormous quantities, but so excellent are they that at the world's Colombian Exhibition at Chicago the fruit of this locality secured the greatest number of awards."

Leaving Port Arthur, on Lake Superior, a most interesting run of about 1,000 miles on the Canadian Pacific Railway, through the prairie provinces of Manitoba, Assiniboia, and Alberta, which chiefly form the Great Central Plain of Canada, the Crow's Nest Pass on the Rocky Mountains is reached, and here the province of British Columbia is entered—a country about twice the size of France. The district of this country to which I more particularly wish to draw attention lies in the south-east corner, known as the Kootenay or Selkirk country, and is watered by the rivers Kootenay, Columbia, and numerous other smaller rivers and lakes.

Mr. St. Barbe, of Nelson, in describing the advantages which the Kootenay Valley has over the rest of the provinces as a fruit-growing region, says there are two; the first is the climate, which permits the cultivation of fruit without irrigation, but if water be needed, it is everywhere available. The second advantage is nearness to market. Taking Nelson as a centre of the valley, it is thirty-six hours nearer to Winnipeg than any other fruit-growing place. The fruit is collected from each ranch by steamers, which ply continually along the lakes, and is taken by them to the railway, where it travels in a refrigerator car and arrives in perfect condition at Winnipeg, Calgary, Edmonton, or other destination. It is in consequence of its prime condition that Nelson fruit is in greatest demand.

Mr. St Barbe goes on to say:—The fruit-grower's life is an ideal one. He does not require a large extent of land to work. Twenty acres will keep a family, and it is better to begin with too little than too much. The climate is excellent; seldom does the thermometer fall to zero in winter, and rarely climbs to 90° in summer, while the rainfall, from 25 inches to 30 inches, just supplies sufficient moisture for the crops. The scenery is everywhere as fine as any in the world, and in Nelson the settler will find many of the comforts of civilisation. The sportsman will find in the waters of the lakes and rivers an abundance of trout and char. In the hills are deer, bear, and grouse. Chinese pheasants, and quail, which abound in Vancouver Island, are being introduced, while not far off are elk, moose and mountain sheep.

To a man with not less than £300 or £400, the Kootenay is an ideal place of settlement. That amount of capital will enable him to buy twenty acres of the very best land and build himself a comfortable cottage thereon. If he has a family he will find schools for his children near at hand.

In the above district all kinds of fruits common to temperate climates are raised—Apples, Pears, Tomatos, Plums, Cherries, Strawberries, Currants, &c. Strawberries are one of the staple crops. Many thousand crates of 24lb each have been shipped out this year. There is a local demand for this fruit, but its chief market is in the towns of the north-west, where the market is an insatiable one, for though the prairies grow the finest wheat in the world, they will not grow fruit.

At Vernon, about 100 miles to the north-west as the crow flies, is the 13,000-acre ranch of Lord Aberdeen, on which a few years ago there were 12,000 fruit trees.

I am afraid this paper is encroaching far too much on the valued space of the *Gardeners' Chronicle*, but I must ask the Editor to allow me to make a short quotation from an article on fruit-growing by Mr. Maxwell Smith, the Dominion fruit inspector. In the course of his paper, Mr. Smith points out that although it is less than sixteen years since the first car-load of fruit was shipped out of British Columbia, progress has been fairly rapid, and people are now beginning to realise something of its possibilities as a fruit-growing province. In the season of 1904 the fruit of British Columbia was valued at 600,000 dollars, and the area under cultivation estimated at 14,000 acres. In 1905 the area under fruit had been increased to 20,000 acres, and the total revenue derived therefrom was nearly one million dollars. In the same year something like 500,000 dollars were expended in the purchase and improvements of fruit lands. *W. Miller, Berkswell.*

FOREIGN CORRESPONDENCE.

LILIUM SULPHUREUM.

I AM sending you a photograph [see fig. 77] which was taken by Mr. C. Sprenger in his garden, near Naples, of Lilium sulphureum, which for one month was the admiration of all visitors. Liliums are not grown well generally in Naples except L. candidum, tigrinum, speciosum, and umbellatum, but this fine species succeeds here in the most satisfactory manner. Three years ago some very small bulbs were received from Upper Burmah, and were planted in a mixture of peat and loam at the foot of a wall in a half shady place with plenty of water during the summer; they have made a good growth. The first flower appeared in the second year and was identified as L. sulphureum. This year, in spite of the ashes from Vesuvius, they came up at the end of April very fast, and have now attained a height of more than two meters, the largest having eight flowers. These are widely open, waxy-white with a golden yellow throat and large crimson stamens and greenish pistil; the flower is not very fragrant, but much finer, and not so heavy as the Madonna Lily. Multiplication is rapid and easy by means of the bulbils in the leaf axils. Lilium sulphureum is one of the most beautiful flowers of its kind and a rival of Lilium auratum, but certainly of easier cultivation, and it is certain that this Burma Lily will be grown in the future in most gardens. The single flower here with a heat of 31° cent. was well open during a week, but in England it would last much longer. *William Mille, Naples.*

FIG. 77.—LILIUM SULPHUREUM FLOWERING IN MR. SPRENGER'S GARDEN, NAPLES.

ORCHID NOTES AND GLEANINGS.

MESSRS. J. MCBEAN & SONS, COOKSBRIDGE.

ODONTOGLOSSUM CRISPUM in the highest condition of good cultivation and in the finest normal and spotted varieties are the special feature in Messrs. McBean's well-managed nursery. From the first Mr. A. A. McBean, who specially attends to the culture of the plants, seems to have understood their requirements, and success attended his efforts throughout until now when the Cooksbridge culture and stock is generally admitted to rank with the very best in the whole world. Success in growing Odontoglossums depends largely on providing suitable houses for their accommodation, and in this particular Messrs. McBean were careful, and their improved methods of arrangement have been reported on several times in the *Gardeners' Chronicle*. Briefly, it may be said that their houses are well ventilated, without being "draughty"; rain-water tanks of great capacity are provided in the base, for rain-water is one of the chief necessaries in Orchid culture; the floors of the houses are of natural earth surfaced with ashes and with teak trellises for walks, and the staging is constructed in the best style, so that each plant has the benefit of fresh air all around it just as if it were suspended. The framework of the staging is put together on the place from "angle-iron" and "T" iron, which can be purchased in quantity and set up on iron standards with water-holding saucers at the bottom to assist in keeping insects from the plants. In the larger houses there is a central, skeleton iron stage of four tiers, the lower ones being only wide enough to take a single row of plants, and the top part several rows. There is a staging of similar construction all round the interior of the house. For the accommodation of the plants red tiles used to be placed on the iron staging, but these Messrs. McBean have now discarded in favour of teak bars 2in. by 1in., and which are cut to fit the parts of the staging on which the plants are to stand and are always movable and adjustable to suit the size of the plants to be placed on the stage. Thus in the lower rows of the central staging for single rows of plants the teak blocks are only 6in. or so in length, and two of them are allowed for each plant, the air from beneath consequently circulating all round it almost as freely as if suspended. There is another reason for the use of teak instead of tiles, viz., that in Mr. McBean's opinion the teak staging is not so cold in winter.

For the purpose of shading lath blinds are used, with an additional thin net or tiffany shading over the lath blind on the sunny side. There are many important points in the arrangement of the Orchid houses at Cooksbridge which would be of the greatest importance to some who are not so successful in their culture, and Messrs. McBean are always pleased to assist others to the benefit of their experience.

The stock being so great the operation of potting, which is now in full swing has to be carried on more or less throughout the whole year: July, November, and December being the months in which only absolutely necessary potting is done, the main potting being completed if possible by the end of September. For potting material good fibrous Orchid peat and sphagnum-moss are still held to be the best, but experiments are being made with Polypodium fibre. Broken flower-pots or "crocks" for the bottoms of the pots are not used, but sterilised bracken rhizome is utilised instead.

The affording of water is one of the most important matters. If the plants are over-watered, as they unfortunately are in many collections, they root imperfectly. The Cooksbridge Odontoglossums never look wet, for as soon as watered the superabundant moisture passes away. They are not, however, allowed to get dry, but are carefully picked out and watered before that stage is reached. Plant after plant which Mr. McBean turned out of the pots for an inspection of the roots showed the pots full of them, the older roots being still white and healthy while the new ones are forming.

But to return to the plants. The same health characterises the whole of them, and in every house the same great sleek bulbs and spotless fleshy green leaves are to be seen. Many of the specimens in the larger houses are of enormous size, and the tale of their progress in many cases is interesting; but the best evidence of success perhaps is given in the case of fresh importations which rapidly assume the appearance and size of old-established plants. A pleasant example was seen in a batch imported in 1904, but which could not be distinguished from the plants of much earlier importations, the 1904 plants having two or three fine leafy pseudobulbs and new growth again forming.

It is not the O. crispum season of flowering yet, still there were many very handsome forms in flower, although seventeen dozen spikes were said to have been cut on the previous day. The spikes in many cases bore fourteen or fifteen fine large flowers, the typical white or blush-tinted varieties predominating. The same appearance of extraordinary size and vigour characterised all the plants, and especially in the three largest span-roofed houses, one of which has the side staging filled with selected varieties both white and blotched, many of which have already made a stir in Orchid circles, while yet others have not been publicly shown. Among the former are the famous O. crispum "Persimmon," now in bud; O. c. Pittianum, O. c. Abner Hassel, O. c. Annie, O. c. Lindeni, with three leading growths; the marvellous O. c. F. K. Sander, and representatives of most of the best blotched forms; while among those which have not yet made their *début* are several of which drawings had been made, and which should take high rank.

Some of the plants in the select division are not the property of Messrs. McBean, but have been entrusted to their well-known skill by some of the leading Orchid amateurs. The central row in some of the houses is of Oncidium macranthum, which produces enormous pseudo-bulbs and a great profusion of flowers. One then in bloom was the fine O. m. hastiferum, and another had a spike only about a foot in height and with four very large flowers of a clear Buttercup yellow with sepia brown tint on the sepals. Odontoglossum Edwardii does equally well, and patches of finely-grown Cochlioda Noezliana, Odontoglossum Harryanum, O. luteo-purpureum, and O. Pescatorei of a very fine type, were noted. In one of the houses a distinct form of Odontoglossum crispum with the lip almost entirely reddish-purple, after the manner of O. c. roseum and with spotting on the sepals, was remarked.

SEEDLING ODONTOGLOSSUMS.

Messrs. McBean have lately taken up the raising of hybrid Odontoglossums, and already a small batch is approaching the flowering size, while many thousands are in the germinating and store-pot stage. The crosses have mostly been made from finely blotched O. crispum on the one side, and on the other some species likely to give a novel combination. The seeds are sown on the surface of the compost around plants of ordinary O. crispum, which are simply suspended near the glass of the roof and they germinate freely.

THE INTERMEDIATE HOUSES.

Specialities other than Odontoglossums are to be found in the warmer houses, in one of which is a large quantity of chiefly white forms of Lælia anceps, L. a. Schroderiana predominating. Among the coloured forms the superb L. a. Fascinator, which secured an Award of Merit at the Royal Horticultural Society, is the finest. A large batch of Cattleya Dowiana aurea had quite three-fourths of the sturdy plants with flower sheaths, and a fine lot of C. Trianæi, including a plant of the white C. T. Amesiana, were equally good. A stage in this house contained vigorous specimens of Cymbidiums; also of Dendrobiums in many rare varieties; Lælias and Lælio-Cattleyas, some few in flower; Oncidium incurvum with many spikes; Cattleya Schroderæ, a batch in sheath; some good Brassi-Cattleyas, and a vigorous lot of Cypripediums, with a fine C. triumphans; a very handsome cross between C. Argus and C. Harrisianum superbum, and a few others in bloom, including a large specimen of C. Lord Derby, and a good one of C. James II. Veitch.

Of plants other than Orchids noted were a large batch of finely-coloured Saxifraga sarmentosa tricolor, some handsome specimens of the white-variegated Dracæna australis Doucetii, some well-furnished Araucaria excelsa, and nice plants of the handsome Asparagus myriocladus.

FIG. 78.—THE PRIMULAS OF CHINA: WILD PLANT OF PRIMULA SINENSIS COLLECTED IN ICHANG BY DR. HENRY.

THE PRIMULAS OF CHINA.

As is known to plant-lovers generally, the genus Primula belongs essentially to the temperate regions of the Old World. Messrs. Pax and Knuth, in their recent monograph enumerate 208 species, and two others are given in the addenda. Of these 210 species, no fewer than 201 occur in Europe and Asia. Of the remaining nine, seven are found in North America, one (P. imperialis) in Java, and one (P. simensis) in Abyssinia. The latter is by some authorities considered to be only a form of the Arabian P. verticillata.

An analysis of the distribution of the Old World species, shows that 76 species are endemic in China, 46 species in the Himalaya, 31 species in Europe, and 10 in Japan. The remainder are scattered from Asia Minor to Afghanistan, and throughout Central and Northern Asia. Six species (P. Listeri, P. denticulata, P. nivalis, P. involucrata, P. sikkimensis, and P. geranifolia) only are common to China and the Himalaya, and one species (P. Forbesi, see fig. 79), is found in Yunnan and Upper Burmah. Three species (P. algida, P. sibirica, and P. farinosa) are widely spread in Northern Asia, and forms of these extend to the Chino-Himalayan regions. Two species (P. borealis and P. farinosa, see fig. 80, p. 193) extend practically all around the northern regions of the world, while a form of P. farinosa is isolated right away down in the mountains of Patagonia and the Falkland Islands. But, perhaps, the most astounding fact of all is that no species of Primula is common to China proper and to Japan!

As I have elsewhere (see *Journ. R.H.S.*, vol. xxix., part 1, p. 657) indicated, the popular belief that the floras of China and Japan are one and the same is erroneous. Later I hope to substantiate this with proper details and analyses. For the time being it is sufficient to draw attention to the remarkable fact of the dissimilarity in the species of Primula from the two regions.

With 129 out of the 210 species recorded in Pax and Knuth's monograph, it will at once be seen that the headquarters of the genus is to be found in the wild and rugged regions of the Indian and Chinese Alps. The European groups to which the common Primrose, Cowslip and Auricula belong are not represented in China. In fact, leaving aside the *Farinosæ*, no group of European Primroses has representatives in the Chino-Himalayan regions.

Until comparatively recently, China's wealth in species of Primula was entirely unsuspected;

and the same is true of many other genera. It is to those unselfish and indefatigable workers for science Pere David, Pere Delavay, and Dr. Augustine Henry—that we owe our first real knowledge of the marvellously rich flora of Central and Western China. Pere Delavay was the first to discover and make known 50 per cent. of the Primulas at present recorded from China! During his own wanderings in China, the present writer collected some 50 odd species of Primula. A large percentage of these are new to science, but only those that have flowered under cultivation have as yet been described. Five of these new species are taken up by Pax and Knuth, and to these must be added four others, making a total of 85 endemic species at present recorded from China.

With the exception of P. Maximowiczii, which is found in the neighbourhood of Peking, we have no record of any Primrose occurring in China east of Ichang (long. 111° 30′ circa). However, it will be passing strange if the botanically unknown mountains of Hokien and Hunan do not yield species when properly investigated. Even in Central China comparatively few (13) species have been found. Indeed, whilst the genus is widely spread in China, and ranges practically from the sea level to the limit of vegetation, the great concentration of species occurs in the highlands of the extreme west. With certain exceptions, the Chinese Primulas are very local in their distribution. For example, P. sinensis is confined to the limestone cliffs in the immediate neighbourhood of Ichang (see fig. 78, p. 191), but P. obconica extends from Ichang westwards for a thousand miles. These two species also occur at lower altitudes than any other species of Chinese Primula, Ichang being only 129 feet above the sea-level.

The altitudinal limits of any one species is usually sharply defined, and it is most interesting, when traversing the mountains, to note how one species displaces another as any considerable ascent is made. The order of their appearance is first an odd plant or two leading up to the ascent to a vast colony at the altitudinal optimum. Above this point the numbers dwindle, and finally the species disappears and another puts in an appearance. In various parts of this country thin woods carpeted with Primroses and meadows with Cowslips are common and familiar sights. Only by keeping such sights as these in mind is it possible to appreciate the colonies of Primulas in Western China.

As hinted above, Primulas are essentially social plants, forming at their altitudinal optimum vast colonies to the partial exclusion of other plants, and, when in flower, often constitute a dominant feature of the vegetation. In the Alpine regions of Western China, which are simply a continuation or extension of the great Himalayan Alps, Primulas are rampant. I have walked for days through woods carpeted with the lovely violet-purple flowered P. ovalifolia and P. sonchifolia, and Alpine meadows ablaze with colonies of various species. A Primula (P. obconica) was one of the first plants to greet me on my arrival at Ichang and in Eastern Tibet, at 16,100 feet above the sea, on a spur of a virgin snow-clad peak, a Primula (P. dryadifolia) was the last plant I could find on the blue quartzose and granite boulders of a moraine.

The colours of the flowers, and especially in the Alpine species, are usually vivid and intense. They range from soft yellow, through the varying shades of pink, red, and purple, to the loveliest of blue. And the delicate fragrance of many I might say majority adds a further charm. *E. H. Wilson.*

(To be continued.)

FORCING FRUIT TREES IN POTS.

(Concluded from page 184.)

Time of Beginning to Force.

In our case, we place a few trees (Nectarines only) into a house that is closed about December 1. This is done in order to secure a few dishes of fruits, if possible, in advance of the first early house, in which the trees are started about the middle of the same month. In such a house as the latter, three or four, or even more, varieties can be started, so as to form a succession. This year we have worked our extra early Nectarines through the vineries, first in the first early, then in the mid-season, and afterwards in the late vinery for ripening; this has answered very well, but I do not advise too many trees to be so treated. Our Cherries are never really forced artificially, being under glass the buds naturally develop earlier than they would if out of doors. Then we commence to keep the atmosphere of the house close, but do not employ fire heat until the fruit is fairly set, so long as we can be sure of the atmospheric temperature of the house not falling below 37°, or 5° above the freezing point. We never quite close the Cherry house at all unless it is very severe weather indeed, and never close it in any case when there is a little warmth in the water pipes. Cherries are most impatient of any excitement at any stage until the stoning is completed. In our Cherry house we can keep a buoyant atmosphere by having both side and top ventilators open. For Peaches, Nectarines, and Plums, we keep a lower average, night temperature than is usually recommended. This allows of a wider range between the minimum at night and the maximum by day. This is the only variation made. I would rather see the temperature indicated on our thermometers a degree or two below 40deg., than for the record to be nearer to 50 deg. when the trees are in full flower, i.e., the first thing in the morning. In the home of the Peach (Persia and Eastern Asia) the night temperatures are low, even in the earlier part of the summer, and long after the fruits are set. In the day time, however, it is known to be uncomfortably warm. We get this condition in our own case by closing the house early when the weather is favourable.

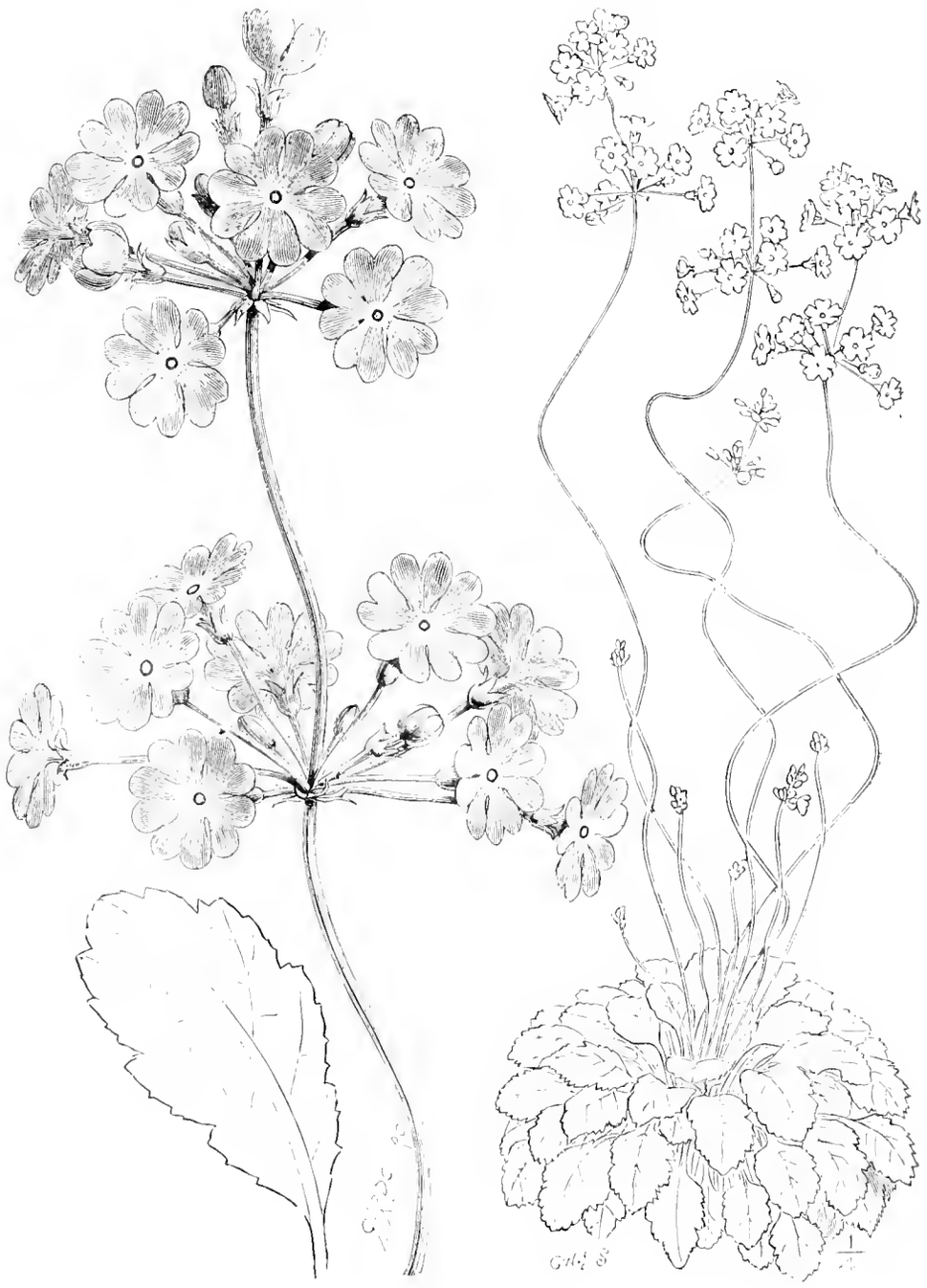


FIG. 79.—THE PRIMULAS OF CHINA: P. FORBESII.

POLLINATION AND FERTILISATION.

As all fruit growers know, this is the anxious time in the cultivation of fruit trees under glass, but not to such a degree as out of doors, in the kind of weather we experienced last spring. Formerly we depended upon the careful manipulation of the pollen masses by means of a camel's hair brush or of a rabbit's tail. We have discarded these means now and adopt what is no doubt an older plan, which is as follows: we have a hive of bees in each house when the trees are in flower, and find this to answer admirably. Upon a fine day it is a pleasure to see the bees actively employed in their work; in the Cherry house they seem to be specially at home and busiest of all. Until we resorted to bees for effecting pollination, we could not secure a good crop of Early Rivers Cherry, but now there is no difficulty. Perhaps on this point the experience of others may be different.

PRUNING.

We adopt a different system with trees in pots to that we practise on those planted out. We do not prune, save to a slight extent, either Peaches, Nectarines, or Plums, whilst the trees are dormant. We prefer to prune, so much as may be required when the fruit is set; this dispenses with and takes the place, almost perfectly, of the well-known process of disbudding. If the object be to make a pot tree as large as possible, less pruning and more disbudding would be better. There will not be any over vigorous, or very sappy, shoots to be dealt with under pot culture. It is an easy matter to regulate the branches by tying as occasion may arise. In doing the pruning care is exercised not to leave any wood above the bud that can die back. We prune close to the bud and the wounds eventually heal over. Pinching is done when the shoots get to a moderate length, and according to the particular tree being dealt with—usually from 6 to 9 inches. Of course, by pinching the stronger shoots first, more strength is thrown into the weaker ones. In making or building up a tree of pyramidal shape, a leader must be secured; this can be kept in position with a slight stick fixed to the stem. In some instances a stake is of use to support or keep the tree in a good shape.

RIPENING AND GATHERING.

As the fruits commence to develop a fairly good colour, syringing is discontinued. This can be done with greater safety in the case of pot trees, because throughout the growth up to that period it is easier to ply the syringe to every part of the tree than it is in the case of trained trees. There is also another reason for discontinuing the syringing early, viz., to guard against any tendency in the fruits to crack or split. For instance, in the cases of Cardinal, Early Rivers, and Lord Napier Nectarines, this will sometimes occur; as a case in point, during two or three wet or dull days, when the final swelling is in process. Perhaps syringing has been done early in the morning and the moisture has clung to the trees for some considerable time. This will induce splitting and thus disfigure the fruit. Most fruit growers have noted, no doubt, that Lord Napier Nectarine has a peculiarity at times of assuming a rusty appearance. In my opinion it is caused by this excess of moisture, with possibly a sudden outburst of sunshine upon it. Cardinal Nectarine, it should be noted, is not recommended as a trained tree out of doors. I think it is the tendency to split that is the cause of this. Under pot culture, by exercising care, we have no trouble at all with this variety.

In gathering the fruits from our pot trees we adopt the plan (in order to avoid any bruising at the base of the fruit) of snipping off each fruit carefully with a pair of Grape scissors. There is a tendency in the case of trees in pots for the fruits to swell hard back upon the stem. It also occurs in the case of trained trees, and is specially noticeable in Early Rivers Nectarine. Now, if these fruits are twisted even in a slight degree some amount of bruising must ensue. By the use of a strong pair of vine scissors this is completely obviated. In any case it is better than taking the fruit completely into the palm of one's hand, with the possibility of inflicting a bruise.

TREATMENT OF TREES AFTER FRUITING.

As soon as the fruits are all gathered the houses are freely ventilated, and after a few days of this treatment the trees are ready to be turned out of doors for the summer season. A position that is moderately exposed is better for this purpose. In order to save some amount of watering during the warm weather the trees are all plunged to the rim. There need not be any fear in doing this for the pots will be full of roots, and the beneficial effect of the plunging will be apparent in the amount of young roots that will have made their way into the soil. When the trees are lifted in the autumn, we place them somewhat more closely together than when under glass and keep them loosed or syringed frequently.

CROPS TO FOLLOW.

Crops in succession may be easily varied to suit every individual case. We follow on with later trees in pots, also largely with Figs in pots, with Melons, Tomatos, and later still with Chrysanthemums. No house that is devoted to pot fruit trees need be empty any longer than it takes to give it a cleaning down. From start to finish, the pot trees that are forced will take up about seven months, thus there will be abundance of time to have first a crop of Tomatos or Melons, and then the November Chrysanthemums.

INSECT PESTS.

These are the same as in any other phases of fruit tree culture, but so far as my experience serves me, insects are not so troublesome from the reason I have already given, viz., the accessibility of the trees to the beneficial effects of the syringe. We make it a rule to fumigate the house as soon as the trees are stood out for forcing, and again before the flowers expand. Thus, various forms of aphides are kept in check. Red spider rarely if ever causes any trouble, nor does the maggot in the Cherries; the syringe stops the former and fumigation the latter.

TIME TO START FRUIT CULTURE IN POTS.

The best time to start with fruit trees in pots is the autumn when the trees can be selected to suit any given case as regards height, &c. See that they are well ripened and promising well for a crop. If these are received from the nursery by the end of September the potting can then be done early in October. In dealing with fresh trees do not be induced to defer the potting for a season, rather reduce the balls and pot afresh into pots of the same size. *Jas. Hudson, Gunnersbury House Gardens, Acton.*

FIG. 80.—THE PRIMULAS OF CHINA: P. FARINOSA.

(For text see page 191.)

NOTICES OF BOOKS.

A FIRST COURSE IN PRACTICAL BOTANY, by G. F. Scott Elliot. Blackie and Son.

PRACTICE must sink into ruts and grooves unless moved onwards by theory, whilst theory without something practical at the back of it can be of no advantage. The book before us opens with an aphorism which supplies the clue to the whole of its contents. It is, we are told, the result of five years' continuous trials at the Glasgow and West of Scotland Technical College, during which a combined course of flower study experiments, microscopic work, and explanation has evolved itself. The earlier chapters are devoted to the selection and collection of plants and other objects which may be required later on, and comprise hints as to the acquisition of microscopes and other apparatus. These materials provided, an ordinary flower is taken and its parts indicated. Before this information can have been digested the reader is informed that "the primæval flower was of a very different character. It consisted of a long stalk, with green leaves arranged one above another in a spiral, like ordinary leaves on a branch. The uppermost of these leaves carried on their edges female reproductive bodies or ovules; those in the middle carried male spores, also on the edges; whilst the lower were like ordinary leaves." This is commencing at the beginning, but to make the student plunge into the prehistoric before he can have grasped the actualities of the present, seems a questionable procedure. The book is clearly more suited for the teacher than

for the novice. The personal explanations that a competent instructor should afford his class would be a valuable addition to the information contained in the book. As early as the "third day" the student is introduced to the intricacies of nuclear division to chromosomes, centrosomes, and other minutiae which only an advanced student can hope to see for himself. For 25 "days" the author goes on explaining the morphology and mode of life of plants, with numerous illustrations and copious bibliographical references. No doubt the pupil who systematically follows the directions here given, especially if, as we have said, he has the advantage of the constant help of the teacher, would acquire a very extended knowledge of plants and of plant life.

But at the end of it all he would be forced to appreciate how very limited is the extent of his knowledge. "We must," says the author, "read, experiment, use the microscope, or, what is far better, our own eyes, and in the open air, but it is also a duty to think, and a very little thought reveals an insoluble mystery everywhere . . . the simplest fact in the life of the commonest weed is essentially as mysterious as ever." This is, no doubt, true, but it is not encouraging to the student, who requires to be assured that, although he cannot expect to comprehend the whole truth, his labor is not in vain, but that every step forward that he makes will in one way or another be of substantial advantage to him.

LE CAOUTCHOUC EN INDO-CHINE. (Rubber Trees in Indo-China) Par Camille Spire and A. dré Spire. Paris, Challamel.

THE production of rubber is of such vast commercial importance that it is no wonder that scientists and cultivators are alive to the necessity of obtaining full information as to the sources of supply and the methods of cultivation appropriate to particular species and varying climatic conditions. The book before us is written mainly by two brothers, one of whom is responsible for the botanical details, the other for the industrial and commercial portions. The country dealt with includes Cochin China, Cambodia, Tonkin, and other territories under French influence. The species described belong, for the most part, to the order Apocynaceæ. Botanical descriptions, including anatomical details, are given, and the book is illustrated by 35 plates. The latter portion of the volume is devoted to the chemistry of the subject, the method of collecting and preparing the latex, and to commercial details. The book is well got up, with ample facilities for the reader in the shape of indexes and tables of contents, so that it forms a valuable addition to the already extensive literature of the subject, the more so as it deals with a country comparatively little known to other than French explorers and men of science.

THE NEW EARTH. A Recital of the triumphs of modern agriculture in America, by W. S. Harwood, New York. The Macmillan Company.

THIS is a very readable account of what is being done by the Department of Agriculture in Washington and the several agricultural stations in the United States. If it were not written in such a "high-falutin" style, we might imagine shall we say guess?—that the book might fulfil the very useful purpose of making known to the general public the general trend of cultural science and its application to practice, but we fear the pen of a ready writer will in this case fail to carry conviction. What would an ordinary market gardener or "truck-farmer" think when he reads such a passage as this (p. 10)—"Then the soil for his Lettuce and Peas and Beans and Onions and Radishes must be of a certain well-defined structure. It must have at least one billion nine hundred and fifty millions of particles in a cylinder one-fourth of an inch in diameter and half an inch long, the little cylinder thimble, the approximate measure of a gram." Some vegetables will require two billion additional particles in each "gram" of soil, whilst if he is to grow Wheat he will require ten billion two hundred millions of particles, and so forth. Far be it from us to attempt to dispute the accuracy of these figures: we admit that they are far beyond our powers of computation. Then we have a chapter on soil inoculation, which has not yet proved a complete success on this side of the water. A section on the breeding of a selection of Wheats follows, but, in view of the recent Hybridisation Conference and the discussions thereat, it is not necessary for us now to follow our author. Insect-pests and weeds next come under review, and then a whole chapter is devoted to Luther Burbank and his work, "Greatest of All Plant Breeders." We are ready to believe that Mr. Burbank has worked on an unusually large scale, and has achieved, as such a worker must do, some important results, but the extravagant laudation that has been bestowed upon him has naturally led to a certain amount of scepticism. His methods are not new: they are the same as have been followed, and are made use of by all our seed-farmers and experimenters. Moreover, the few results that have as yet been seen on this side of the Atlantic do not justify the high-flown language which has been used concerning them. We have heard it said that Mr. Burbank himself is averse from self-seeking and notoriety, and that the adulation bestowed upon him and his works is distasteful to him. If this be so, it is a pity he does not save himself from his friends, and give to the world a plain statement of what he really has done and of what he hopes to do in the future. In existing circumstances it looks as if sometimes Mr. Burbank's name was attached to productions for which he is himself in no way responsible. If that be so, that is another reason why he should protest against the improper use of his name. Other chapters in this book are devoted to horticultural progress, forestry, dairying, husbandry, the work of the Agricultural Experimental Stations, &c. The writer, as we have said, has a fluent style, which makes his book easy and pleasant to read, but it would carry more conviction to his readers if the style were a little less ornate.

The Week's Work.

THE ORCHID HOUSES.

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

Odontoglossums.—Much time will be required during the next few weeks in carrying out the necessary repotting, &c., of the cool-growing Odontoglossums. September is the best month in the year to disturb their roots, as during the following period of cool nights a very suitable atmosphere can be maintained in the house, which is of the greatest assistance to each plant in getting thoroughly established before winter. Many of the young growths which have started will soon produce new roots, and having fresh compost will quickly get over the operation. At the present time some plants have flower spikes, and others have not yet started to grow; these should not be disturbed at this season, deferring the repotting until the new growths have made sufficient progress to produce roots from their base. These remarks apply chiefly to those of the O. crispum section, and to such well-known species as O. Harryanum, O. Hallii, O. luteo-purpureum, O. Pescatorei, O. triumphans, &c.; also to many hybrids which have been raised from these and other species. It may be advisable to caution beginners in Odontoglossum culture against using pots that are out of proportion to the size of the plants, as over-potting generally ends in failure, especially if at any time there is overliberality in regard to affording water at the root. The pots used should be quite clean and dry, and they should be drained to about one-fourth of their depth with clean crocks or pieces of well-dried fern rhizome, which have been taken from the peat. Over this a thin layer of rough moss should be placed to make the drainage secure. A suitable compost for these Odontoglossums consists of good fibrous peat and freshly-gathered sphagnum-moss in equal proportions. Mix it together in a rough state and then with a pair of shears cut it up, but not too finely. A little leaf soil may be added according to the discretion of the cultivator; also a moderate quantity of small broken crocks and coarse silver sand. When preparing the sphagnum-moss pick out all leaves, grass, and other rubbish, and closely examine it for slugs and snails; should any of these insects be found, wash the moss thoroughly in tepid rain water; by this means many eggs will be got rid of which are unseen by the naked eye. Pot the plants moderately firm, keeping the base of the young growths just below the rim of the pot, and when the operation is completed, prick in a few heads of living sphagnum-moss over the surface. For a few weeks after repotting it is advisable to water the plants very sparingly, applying it through a fine rose-watering can, and giving only just sufficient to induce the moss to grow; a decidedly moist atmosphere should be maintained, and as much fresh air admitted to the house as possible, especially when the external atmosphere is warm and moist. Carefully shade the plants from all strong sunshine. Any old plants which are unhealthy should be turned out of their pots, the roots well washed, and all dead parts removed; they should then be repotted into pots just large enough to hold their roots. Such weak plants require to be managed much in the same way as imported plants, keeping the atmosphere surrounding them as moist as possible, and affording but very little water to the roots; they will also require more shade than those which are in a sound, healthy condition.

Propagation.—When repotting the bulbs of the plants, it is not necessary to allow more than two or three back pseudo-bulbs to remain on each leading young growth; the old pseudo-bulbs that are removed may be placed in crocks or laid upon damp moss, and some of them will produce growths, after which they may be repotted. Where it is desirable to increase the stock of some special or valuable variety, the plant should not be disturbed by repotting unless it is absolutely necessary, and in such a case the less the roots are disturbed the better. If a plant, for instance, has four pseudo-bulbs, the rhizome may be severed between the second and third bulbs, leaving two bulbs on each piece. The back bulbs, if plump and healthy, will soon produce a new growth, and when young roots appear the plant may be removed and potted separately.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Caladiums.—As the foliage shows signs of dying away, so should the supply of water at the roots be decreased until the bulbs are thoroughly matured. It is important that the plants going to rest should be ripened off in the sun; the bulbs thus treated show a marked difference when started again in the following spring to those which matured, so to speak, under the shade of other plants. When the foliage has quite dried away, and not till then, place the plants under the stage in a house where the atmospheric temperature is not lower than 60°, taking care to put them where no drip will reach them.

Achimenes.—Remove these from the conservatory as they pass out of flower, and place them in pits where they will be fully exposed to sunshine; gradually diminish the amount of water until the foliage has died away, after which place the pots on their sides and keep them in an atmospheric temperature that will not fall below 55°.

Bouvardias that have been planted out during summer should be prepared for potting up by cutting round the roots of the plants with a half-round trowel a few days previous to lifting. After such treatment, the plants will not suffer so severe a check. When the plants have been potted, keep them in a shaded pit in an atmospheric temperature of 50° to 55°. Syringe them freely until they have become established in the new soil.

Begonia Gloire de Lorraine.—The leading shoots should be tied to very neat sticks, unless the plants are intended to be suspended in pans or baskets, for which purpose they are well

adapted. If cultivated in baskets, such baskets should be lined with wood-moss to screen the wires. One plant may be placed in the centre of the basket and three other smaller plants should be put around the sides, and they will then droop over. Syringe the moss frequently, and stimulate the growth of the plants by a weekly application of manure and soot water. The atmosphere of the house should be kept moist, otherwise the foliage will become hardened, and assume a rusty appearance on the under sides of the leaves.

Codiæums.—If these are propagated during the present month and kept in small pots during the winter, they will make excellent plants for table decoration or for grouping next summer. Select only the very best coloured shoots for this purpose. I attach much importance to the careful selecting of thoroughly matured wood with an even blend of the rich colours in the cuttings when they are taken from the parent plant; the chances are that the high colouration will be maintained in the future life of the plant, whereas from immature cuttings there are seldom deve'oped those rich tints which are so much admired. The cuttings should be immersed in a tank of water for a few hours previous to insertion in small pots; this will clean them from any red spider which may be lodged in the corrugated leaves (especially in the narrow-leaved section), and cause the leaves to absorb a certain amount of moisture, which will materially assist in keeping the cuttings fresh, without having to maintain an undue amount of atmospheric moisture in the propagating pit, which in dull weather has a tendency to cause the tips of the leaves to decay.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. SIR CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Plums.—Fruits of early varieties under glass have now all been gathered, but the mid-season and later kinds will be yielding a supply which will be appreciated, as the crops outside are, in most places, very thin this season. Ventilation must be freely provided so that the trees will receive an abundance of fresh air about them both during the day and the night-time. They must not be allowed to suffer from lack of water at their roots. Continue to damp all available spaces in the house, but avoid wetting fruits that are ripe or ripening.

Cherries.—Trees that have finished fruiting should be freely syringed, in order that the foliage may be kept clean and healthy. See that the roots are well supplied with moisture, giving manure water occasionally, as this will greatly assist the trees.

Melons have done remarkably well this season, and the recent tropical heat has hastened the development of later batches. It has been necessary to afford them temporary shade during the day-time to prevent the foliage from scorching; but they will not require this protection any longer. Care will be necessary from now, onwards, to obtain the best flavour in the fruit. The temperature while the fruits are swelling should range from 70° to 80° during the day-time, with 65° to 70° at night. Stimulants should be given about twice each week. Mildew sometimes attacks the plants, and should it appear it can be checked at once by dusting the foliage with sulphur. Plants that are showing fruit should have their foliage well thinned out, and their blooms pollenised daily. When they have "set" give each plant a top-dressing of some rich material, and close the house in which they are growing early in the afternoon.

Melons in Frames.—In some gardens the only means of growing these fruits is in frames, but with careful management good-sized and well-flavoured fruits can be obtained in these structures. In the case of frames on manure beds, care must be taken that water is not given to excess. Less ventilation will suffice after this date, and as the nights become cooler, it may be an advantage to cover the frames with mats. Maintain a temperature as nearly as possible the same as that given for Melons in houses. Close the lights early to conserve the sun's heat as much as is possible.

Pines.—The fine, open, sunny weather of this summer has been in favour of these fruits. Pines that are now finishing their ripening should be kept drier at their roots. Ventilation must be carefully afforded frames in which young plants are growing, and cold draughts must be prevented as far as is possible. Towards the end of the month it may be necessary to place mats on the frames at night-time to afford additional protection. Plants, either in or out of pots that have few or no roots should only be slightly watered, and be sprayed at closing time on fine, warm days only. Bottom heat, provided by means of fermenting materials, will be found difficult to maintain at the requisite temperature, and the bed will require frequent additions and renewals of the fermenting materials. Suckers should be rooted as they become ready.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Propagation.—The propagation of next year's stock could have been started quite a month ago, but in few places can the work be commenced in earnest much sooner than the present time on account of disturbing the beds and borders. The work should now be pressed forward without delay. Pelargoniums can be rooted either in shallow boxes, or in 6-inch pots, in which the cuttings can be inserted moderately thickly. Care must be taken to apply water sparingly, as at this time of the year dampness at the surface of the soil must be guarded against, and very little watering will be required until the cuttings are rooted. A sandy, open soil, and not very rich, with a warm, moving atmosphere, and cuttings not over succulent, are essentials to success in propagating these plants. Of new bedding varieties tried this year "King Edward VII." is by far the best, and in the darkness of its crimson flowers, the profuseness of its blooming, and its sturdy habit, it excels "Henry Jacoby," which it much resembles. Though for general bedding purposes raising seedlings of the bedding Lobelia in February is to be commended, it is often advisable for special purposes to raise plants from cuttings for the purpose of propagating from them early in the spring, and now is a suitable time to insert these in boxes. Another good plan is to pot a number of desirable sorts as stock plants for spring propagation. Mrs. Clibran, a variety having a good habit, and flat, dark blue flowers, is an excellent kind for carpet bedding purposes. The new double-flowered variety of Lobelia is certainly an acquisition, and is readily propagated by cuttings throughout the winter. It has rather strong growth and before being planted in the beds it should be starved in small pots, which will cause it to flower profusely. Verbenas may be propagated as soon as suitable growths can be obtained. The cuttings should be inserted in small pots and be given a little bottom heat. As soon as they are rooted they should be given cooler treatment. The best means of increasing the Verbena is from cuttings in the spring, for which purpose it is necessary to have store plants in pots. These stock plants should now be pruned closely and be afterwards given a shift into larger pots containing rich soil. They should be kept in a cool house through the winter, and in the spring good cuttings will be obtainable. Plants raised from these will be better than those struck now. Old plants of Heliotrope should be potted and cuttings be rooted from which to propagate in the spring. Mesembryanthemum, Centaurea, Tropæolum, Petunias, Salvias, &c., all strike very readily, but Alternantheras, Iresines, and Coleus require a little heat to cause them to form roots quickly. Cuttings of Phlox decussata struck now in cold frames and planted out next spring will make dwarf flowering plants during the summer, and these are often preferable to taller plants obtained by simply dividing the roots in the border. Cuttings of the best coloured hybrid Pentstemons and others of P. Menziesii Newberryii should now be rooted. Plants raised every year are better than old plants that have survived the winter. A fortnight or three weeks hence will be soon enough to propagate Violas and Calceolarias from cuttings.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Parsley being always in demand, care should be taken at all times to ensure that there shall be no break in the supply. In order to ensure this during winter, there must necessarily be some protection afforded against excessive rain, frost, and snow, and nothing provides this better than do frames. The best results are obtained from young plants which have been transplanted in early summer, grown on strongly, and lifted early in autumn and placed rather closely together in a cold frame. This lifting should be carried out in time for the plants to recover the shift and make good growth in their new quarters before winter sets in, thus allowing the earlier leaf-age to be gathered off in order to induce the formation of new leaves. When left until too late, the old leaves have to be used instead of fresh and crisp growths. The close-growing and finely-curled varieties are much the best for this purpose.

Winter Lettuces.—Continue to plant good batches of Lettuce to stand for winter supply. Put them out in such soil that the plants when lifted for transferring them to frames will have a quantity of soil adhering to their roots. Small quantities of seed may still be sown, and from the present time onwards I strongly recommend Commodore Nutt and Golden Ball as varieties that will "turn in" quickly and be most useful at about Christmas time if grown singly in pots. If the pots are placed on shelves in any of the fruit houses when the cold weather sets in, the plants will continue to grow usefully.

Mint.—Dibble some young, healthy, and clean tips of Mint thickly into 6-inch pots and also in boxes. These, grown in an intermediate house later on, will yield a far better supply than would be obtained by lifting old roots from the open ground and forcing them in the usual way. Tarragon may be treated in the same manner.

THE HARDY FRUIT GARDEN.

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

The Protection of Apples, Pears, and Plums is very necessary this season, as the birds are attacking them badly, and they do not finish one fruit first, but seek out all the best fruits and begin to eat them, the wasps and other insects doing the rest. All the best varieties of fruit should have a net thrown over them. If a large net be cut up to the requisite sizes, the pieces will last for several seasons, and will also serve for protecting bush and standard Cherry trees earlier in the season. Trees growing against walls are, of course, much easier protected, and for them it is not necessary to cut up the netting. Protection should be afforded without delay, remembering that it is useless to grow fruit to a certain stage and then neglect it. Autumn fruiting Raspberries will require to be protected with wasp-proof netting. These Raspberries should be given a plentiful supply of liquid at the roots during hot weather; they respond very readily to liberal feeding, and a good supply of such fruit is very appreciable. The variety Belle de Fontenay appears to be the best of this section. If Plums are not carefully protected they will soon become a prey to wasps, especially the varieties Coe's Golden Drop, and Jefferson's.

Mulberries should be gathered as soon as they turn colour or the birds will have them. These trees, with their dense foliage, generally harbour a quantity of birds. The fruits are very good after bottling, and afford a nice change in winter. The trees may be afforded a soaking with water, for there is something charming about old Mulberry trees, and they merit a little attention occasionally.

Quinces are fruiting finely this hot season, especially upon trees growing in moist situations. The fruits of these should be left on the trees until late in the autumn, they always hang well and are very ornamental.

Walnuts should be stored as soon as they will fall out of the shell readily. These nuts keep very well if packed in boxes of wood-dust or in some other material that will keep the moisture in them without being of itself wet. If there are no rooks about to steal them, the fruits are much better when allowed to fall from the tree when they have perfectly matured. Generally when the trees are thrashed they are not matured and do not in consequence keep so well.

Gathering Fruits.—Continue to gather fruits as they become fit. Several varieties of both Apples and Pears will now be ready, among Pears Marguerite Marillat, Souvenir du Congrès, Henri d'Amanlis, and the later fruits of Williams' Bon Chrétien will, at any rate, require looking over, selecting the earliest fruits for gathering. A fruit should be very carefully lifted up in the hand from its pendant position to a horizontal one, when, if it is ripe, it will part very easily from its spur. Early ripening Apples will need treating in the same manner.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Sept. 15	German Gardeners' Soc. meets.
MONDAY,	Sept. 17	Nat. Chrys. Soc. Com. meets at Essex Hall, Strand (3 p.m.).
TUESDAY,	Sept. 18	London Dahlia Union Exhib., Botanic Gardens, Regent's Park (2 days).
WEDNESDAY,	Sept. 19	Nat. Rose Soc. Autumn Exhib. at Hort. Hall, Westminster.
THURSDAY,	Sept. 20	*Evening News* Chrys. Exhib. at Hort. Hall, Westminster.

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick 57·2°.

Actual Temperatures.—

London.—*Wednesday, September* 12 (6 p.m.): Max. 71°; Min. 54°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, September* 13 (10 a.m.): Bar., 30·1; Temp., 66°; *Weather*—Fair, but overcast.

Provinces.—*Wednesday, September* 12 (6 p.m.): Max. 66° Guildford; Min. 55° East Coast of Scotland.

SALES.

MONDAY and WEDNESDAY—
Sale of Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY to FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe and Morris, at 10.30.

TUESDAY—
Sale of Greenhouse plants at The Nursery, High Street, Clapham, by Protheroe & Morris, at 12.

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

The Forest Trees of Switzerland. The ordinary tourist in Switzerland is so impressed by the sublimity of the mountains and their accessories that he pays little heed to the trees. He does not see that these often barren slopes have been denuded of their covering by the negligence and carelessness of the inhabitants, and yet the country is so dependent on timber for constructional purposes or for fuel that it might have been supposed that measures of protection and conservancy would have been taken long ago. Take, as an example, the slopes above Grindelwald and Zermatt, where remains of forests of the Arolla Pine (Pinus Cembra) still exist, and where many a storm-tossed veteran may still be met with. These are eminently picturesque, but it would be more satisfactory to see an undergrowth of seedlings of various ages springing up to replace them.

We do not say these do not exist, but they are not present in quantities anything like adequate to the future demand. It is comparatively rare to see young saplings, and no means are, or were, taken to protect the young seedlings from the browsing of goats, horses, and other animals. Near the Tête Noire are remains of magnificent Larches, but here, again, little foresight seems to be exercised. With the Red Spruce—Picea excelsa—the case is, or seems, different; more care appears to have been exercised in order to provide a continuous supply of timber, and a like remark probably may be applied to the Silver Fir. Remains of fine forests of deciduous trees, Oaks in particular, as in the district above Lausanne, are to be met with. On the lower grounds also noble Lime trees may occasionally be encountered as near Lausanne as Pregny, Prilly, Fribourg, Thun, and elsewhere. These trees often commemorate some historic event, and are accordingly cherished by the inhabitants. Striking and impressive as are these noble trees, they are, of course, of no value for forestry purposes, unless it be to show that soil and locality are favourable to the growth of trees. With the view of calling the attention of his countrymen to the need of afforestation, and of protection for what is still left, as well as with the intention of indicating to planters what are the most decorative trees to plant for pictural purposes, M. Correvon has recently published a volume entitled "Nos Arbres."* The author writes as an enthusiast, and occasionally soars into poetic heights.

As, however, he writes with ample knowledge of his subject, this may be forgiven, and, indeed, it may be said that the whole volume is pleasant to read by those to whom the language presents no difficulties. M. Correvon writes agreeably of historical trees, of the consequences of the reckless destruction of forests and the means to be taken to remedy the disasters and prevent their recurrence in the future. He then passes in review the principal trees of Switzerland, not confining himself to those that are native to the soil, but extending his purview so as to include those exotic trees that are hardy and which may be useful for purposes of replanting or for the sake of picturesque effect. The common Pear forms a large timber tree in the Valley of Engelberg, and its fruits are not to be despised when made into a compote. In Caulon Valais, as in the Jura, we have met with fine specimens both of Apples and of Cherries, so that it is clear that those who plant for utilitarian purposes only, need experience no difficulty in fulfilling their requirements, and the Spruce, the Silver Fir, the Cembra Pine, and the Larch are ready to hand for economic purposes.

* Geneva, Atar, Corraterie 12.

Our Supplementary Illustration to the present issue affords two distinct views of the Hollies growing in the Royal Botanical Gardens, Kew. One of the pictures shows a number of fine, naturally-grown specimens in the Holly collection; the other a portion of the unnatural-looking, severely-clipped specimens contained in the formal or Italian Garden near the Palm House. A glance at the two views is sufficient to show that for general decorative purposes the naturally-grown Holly is most to be admired. For special positions, the formal sugar-loaf-like specimens are allowable, but it is to be regretted that in too many gardens the only method of pruning that is practised upon Hollies is that of clipping the growths hard back, as if every tree was really part of a hedge. The result of this is to be seen in the very formal-looking trees that are to be found in most incongruous surroundings, where naturally-grown examples would have produced an excellent effect. For the decoration of the garden and pleasure grounds, the common Holly in its numerous varieties is the most useful of all evergreens, as it is capable of growing almost anywhere in the British Isles and in almost any kind of soil. The varieties afford great differences in the size, shape, and colour of the leaves, and in the size and number of spines. In some forms, such as atrovirens, Hendersoni, maderensis, nigrescens, Wilsoni, and Shepherdi, or Hodginsii, as it is often called, the leaves are large and more or less oval; in camelliæfolia they are often 5 to 6 inches long, 2 inches wide at the base, tapering at the apex to a point. In ovata they are medium sized and ovate, the largest being scarcely 2 inches long; in Donningtonensis the leaves are about 3 inches long and very narrow; in Handsworthensis they are very small, and in ferox, the Hedgehog Holly, intensely spiny. Many varieties have gold and silver variegated leaves as Golden Queen and Silver Queen. The Milkmaid Hollies, aurea medio-picta, and argentea medio-picta, have the centres of the leaves gold and silver-coloured respectively, while the margins are of deep green. In such sorts as camelliæfolia, nigrescens balearica, &c., spines are but seldom found, while many others are more spiny than the common type. Ilex Aquifolium is represented at Kew by about 80 varieties, a few of the handsomest specimens being I. A. nigrescens, 30 feet high and perfect in form; altaclarensis, 25 feet by 20 feet; Golden Queen, 15 feet high; camelliæfolia, upwards of 30 feet high; and platyphylla, 20 feet high. In addition to I. Aquifolium, numerous other species are represented by fine specimens, such as I. cornuta, I. crenata, I. dipyrena, I. integra, I. latifolia, I. opaca, and others. The collection of Hollies is to be found behind the Temperate House, and of most sorts there are two or more representatives. The larger specimens are grown on the outskirts of lawns, a circular patch of open ground, 10 feet in diameter, being left around each plant. The younger and smaller specimens are in large corner beds on the same lawns. Every second year they are examined, when the leaders are set right, and any necessary pruning done. This pruning consists of thinning out, rather than of cutting back shoots, the object being to prevent anything like a stiff appearance. The variegated varieties are examined annually for the purpose of removing branches that are not of the correct colour. The formal trained Hollies near the Palm House are pruned into shape once a year, the work usually being done in August. The pruning is performed with knives or secateurs, to avoid mutilating the leaves, as is done when shears are used. The largest specimens near the Palm House are of Ilex Aquifolium, the smaller ones being gold and silver-coloured varieties. All of these are very old plants, and men who have been at Kew for upwards of 30 years, state that they can see very little difference in the size of the specimens during the time they have known them, which shows what an amount of clipping Hollies may be subjected to without causing them serious injury. A descriptive account of the varieties of Holly which existed at that time, by the late Thomas Moore, with illustrations of the leaves of most of them, was commenced in the *Gardeners' Chronicle*, Oct. 3, 1874, p. 432, and completed in the issue for Nov. 11, 1876, p. 616.

An Autumn Rose Show.—We may remind our readers that the third autumn show, under the auspices of the National Rose Society, will be held in the Royal Horticultural Hall, Westminster, on Wednesday next, September 19, and will be for one day only. An interesting feature of this year's show will be the class for "hips" and foliage of nine distinct species or varieties of Rose. Some Roses, of which R. rugosa is an excellent example, have exceedingly decorative fruits, and the exhibits will be instructive to the public. The President's cup will be awarded in this class.

BOTANICAL MAGAZINE.—The following plants are described and figured in the number for September.

FICUS KRISHNÆ C. DC., tab. 8,092.—A species nearly allied to F. bengalensis. Its native habitat is not known, the cultivated examples having arisen from a branch obtained from a private garden in Calcutta. It is described as a small tree with grey bark, and is especially remarkable on account of its cup-shaped leaves, having the upper surface of the leaf outside; the inside of the cup thus being formed by the under side of the leaf. Interesting particulars of this new species, which the Indians are said to invest with a sacred character, are given by Dr. PRAIN, and a botanical diagnosis is provided by Mr. C. DE CANDOLLE, whose plant formed receptacles in 1905.

CATASETUM GALERITUM VAR. PACHYGLOSSUM, tab. 8,093.—This is a variety differing from the type (as first described in the *Gardeners' Chronicle* by REICHENBACH in 1889, vol. 1, p. 73), in having the front lobe of the lip nearly square, exceedingly thick and obtuse-angled, with very thick borders underneath, leaving a groove in the middle. The figure here given has been prepared from specimens received from Sir TREVOR LAWRENCE, Bart., in February last, and the description is by Mr. R. A. ROLFE.

RIBES VIBURNIFOLIUM, tab. 8,094.—This is a species from Lower California and Santa Catalina Island. The plate here given has been prepared from a plant growing at Kew on a wall in the herbaceous department, where it has grown to a height of 7 feet. Mr. S. A. SKAN describes the plant as a straggling, evergreen shrub, which flowers in March at Kew, and its brilliant red berries persist until the succeeding year.

LINOSPADIX MICHOLITZII, tab. 8,095.—See Mr. RIDLEY's description in *Gardeners' Chronicle*, September 7, 1895, p. 262.

CEREUS SCHEERII, tab. 8,096.—Mr. N. E. BROWN describes this species as having been discovered by Mr. J. POTTS, near Chihuahua, in Mexico, and sent by him to Mr. FREDERICK SCHEER, of Kew, prior to 1850. The plant flowered in 1900 and during the two succeeding years, but subsequently died. A note from the late director of Kew Gardens, Sir W. T. THISELTON DYER, K.C.M.G., states that FREDERICK SCHEER was an independent botanist who for some time resided at Kew and particularly devoted himself to the study of Cactaceæ. He published in 1840 an excellent account of Kew under the title of "Kew and its Gardens." This and other actions were largely effective in averting the breaking up of the collections which had been contemplated, and in their being taken over by the nation from the Crown.

FLOWERS IN SEASON.—Amongst flowers that have been in season during the past month are Montbretias, and, in gardens where they are cultivated successfully, the bright yellow and deep orange-coloured flowers have been produced in greater profusion than usual. A box of flowers sent us by Messrs. WALLACE & Co., Colchester, represent some of the best and most recent varieties raised by Mr. G. DAVISON, of Westwick Gardens, Norwich, who has succeeded in obtaining such excellent and distinct varieties that they form a strain greatly superior to those previously in cultivation. The best of these, and indeed the best Montbretia we have seen, is the variety Prometheus, which grows from 3 to 4 feet in height, and has much branched inflorescences of deeply-coloured flowers, each of which is 3 inches or more across. They are of rich orange colour, with crimson markings at the centre. King Edmund is a rich yellow variety, marked with deep brown-coloured spots inside, and deeper yellow outside. Westwick is a distinct variety, having a ring of crimson colour encircling the clear yellow-coloured centre. The other parts of the petals are of bright orange red on the interior, and deep red on the exterior. Some of the flowers are 3 inches across, and the petals are of good width. Ernest Davison is marked in the centre much in the same way as the previous variety, and the flowers open until they are quite flat; in colour they are a deeper shade of orange than some others, and the exterior is flushed with red. Hereward has much recurved flowers, of pale orange colour. St. Botolph has pure yellow flowers of very large size, but the yellow deepens into orange on the exterior. This variety is described as growing 4 feet high. The deepest coloured of all the varieties is one known as Lord Nelson, and its shading of orange-red and crimson affords a fine contrast to the yellow varieties, such, for instance, as Lady Hamilton, whose yellow blooms have only a suspicion of reddish-orange colour in the centre. This last mentioned variety is among the most charming. Many gardeners complain that Montbretias do not succeed well in their localities, but in districts where the older varieties do succeed, as, for instance, in the Isle of Wight, where they appear in almost every cottage garden, these newer sorts being so extra vigorous may be expected to thrive even more perfectly.

FIG. 81.—MECONOPSIS PELLA FLOWERING IN THE EDINBURGH BOTANIC GARDENS FOR THE FIRST TIME IN BRITAIN.

(For text see page 198.)

NEW INSECT PEST ON LARCH.—The Board of Agriculture and Fisheries desire us to draw attention to the occurrence on the Larch of an insect, hitherto unrecorded, in destructive abundance in this country. The insect in question (Nematus Erichsonii) is a species of sawfly, the larva of which bears considerable superficial resemblance to the Gooseberry caterpillar, and to the caterpillar of the Pine sawfly. The larvæ are about three quarters of an inch long and possess 20 feet. They feed upon the leaves of the Larch from about the middle of July till the end of August. At the present time, therefore, few larvæ are to be found, but trees that have been attacked can be readily distinguished by their more or less leafless condition, and amongst the moss, grass, and leaves underneath such trees the brown cylindrical cocoons will be discovered. Where this is the case the surface-covering of the ground should be collected and burned. So far, serious damage has only been reported from Cumberland, where, however, the health if not the life of an extensive Larch plantation is in danger. It is of the utmost importance that outbreaks should be discovered at an early stage, so that they may be suppressed while still of restricted extent. The Board are preparing an illustrated account of the insect, which will be published in the October issue of their Journal.

PREVENTION OF CORRUPTION BILL.—"This measure received the Royal Assent three weeks ago, and will become operative on January 1, 1907 . . . . There can be no doubt that a measure of this kind has for long been needed. Many men who have been successful in retail business—including, unfortunately, a few persons connected with the trade in drugs—have owed a large portion of their prosperity to the systematic 'tipping' of butlers and other domestic servants. Large commercial contracts have been obtained from public councils and local authorities because the contractors have 'greased the palm' of the salaried officers whose duty it is to ensure that the ratepayers' money is well spent. There are many men in high positions who have at some time or other neglected their duty to their employers for the sake of gain; and it is to be feared that not all buyers in the employ of commercial firms can be regarded as wholly incorruptible. In some instances the acceptance by an employee of a secret commission has not been regarded as a moral delinquency, for the reason that the practice has been so common as to be 'winked at' by the employer. But it should hardly be necessary to point out that even connivance of this kind does not excuse corruptness of motive on the part of those giving and receiving bribes, and it will be of no avail as a defence to criminal proceedings under the new Act."—*Pharmaceutical Journal.*

NEW PUBLIC PARK FOR SHERBORNE.—The late J. K. D. WINGFIELD-DIGBY, Esq., of Sherborne Castle, had announced his intention of presenting a park to the town of Sherborne in commemoration of his son's coming of age on September 5, 1906, but, unfortunately, Mr. DIGBY died on Christmas Day, 1904. His son and heir to the estates has, however, generously redeemed his father's promise and given the land for the park. It may be remembered that a very successful pageant was held at Sherborne last year, with the result that a handsome sum was obtained after paying all expenses. With the greater part of this amount it was decided to lay out as a park the land between the railway station and the town, so generously given by the present owner of Sherborne Castle. The design submitted by Messrs. ROBERT VEITCH & SON, of Exeter, was accepted, and a most attractive park has been made, the work being executed under the superintendence of the late Mr. MEYER. About 150 tons of stone have been introduced to form rockeries, while water has been led in to form a lake, and many hundreds of alpine plants, shrubs, aquatic plants, and ornamental trees planted. The new park is to be known as the Pageant Gardens.

APPLES IN THE UNITED STATES.—A correspondent writing in *The Times* for September 7 gives some interesting particulars of an Apple census which has been taken in the United States, and relates that there are now 200,000,000 fruiting Apple trees in America, and the industry is still being extended each year. Orchards are being planted at a rapid rate in California, Washington, and Oregon. This season the American Apple shippers announce that they will send between 4,000,000 and 4,500,000 bushels of Apples from their ports, the bulk of which are to come to Great Britain. Tons of the Colorado Newtown Pippins will be sent into Covent Garden market, especially during the Christmas season. A well-known firm of fruit-brokers has secured a very large quantity of the largest and finest Apples of their class from this centre, and they will all come to London at Christmas time. These giant fruits will be packed in one bushel boxes, and it is estimated that the London buyers will readily pay 20s. a bushel for

them. Although all the orchards are sprayed, yet the grub of the codlin moth chiefly destroys on an average 20 per cent. of the crop. It is estimated that the lowest computable loss from this one pest alone is £4,000,000 per annum. In addition, it costs an average of 4d. to spray each tree. The American Apple-grower spends something like £3,333,333 on spraying. Despite these drawbacks, Apple culture is the most promising branch of agriculture in the States. The fertility of some of the fully-matured trees is remarkable. An observer in the Colorado Apple districts states that he has seen as many as 50 bushels of fruit gathered from one tree. The general average is a poor one against such a crop as this. In the Newtown growing districts 3s. and 4s. a bushel are paid for best Apples. It is said that in 10 years' time the Apple harvest of the United States will be doubled; nevertheless the home consumption trebles itself every ten years. Over-production is thus impossible.

BEES STUPEFIED BY POLLEN.—Our valued correspondent, Mr. W. E. GUMBLETON, in writing to us of an American single-flowered Dahlia, distributed by Mr. DREER, of Philadelphia, under the name of "Twentieth Century," states that the florets are persistent for twice as long as those of ordinary single Dahlias, and that the pollen has such an effect upon bees that they drop from the flowers to the ground in a quite stupid condition.

four other buds appearing in the axils of other leaves around the base of the flower stalk. The flower scapes are simple, bearing only one bloom, which rises just above the foliage, and is about one and a quarter inches in diameter. Probably, in older and stronger plants, the flower stalks will be longer, as shown in Dr. Prain's figure in the Calcutta *Annals*. The petals are of light blue colour. The stamens are numerous, with yellow anthers, while the filaments are of a dark purple colour, which give the flower the appearance of possessing a round purple disk at the base of the petals when first observed.

The plants were raised from seeds received from the Calcutta Botanic Garden, with other species of Meconopsis, early in 1904. A good percentage of the seeds sown germinated, and, when large enough to be handled, were pricked off into pans in much the same manner as adopted with other species, though, being smaller, they required rather more care. Some were left in these pans, while others were this year potted into small pots, but little appreciable difference could be observed in the strength of those grown by either method.

The mixture of soil used here is one of peat and sand, with a small addition of loam.

A cold frame with a northern exposure until the plants are well established is found to give the best results for this species.

Although this plant has previously been

and curly multifid tassels, and the frond a much larger, rather corymbiferous one, the whole having a peculiarly neat appearance. The term canaliculata has been applied owing to the frond forming a kind of half tube, or channel, due to the inward curvature of the side divisions, as shown in the illustration, by two sections, and from which it will also be seen that the frond narrows at its base. The variety is a noteworthy addition to the many extraordinary sports which have quite suddenly characterised this species in the last few years after decades of cultivation on perfectly constant lines. It has been Mr. May's good fortune to introduce the majority of these as sports originating in his own nursery. The abundance of these varieties occurring within so short a period suggests that Prof. de Vries' theory of the occasional occurrence of periods of mutation or sudden change in specific forms is not without foundation. *C. T. Druery, V.M.H., F.L.S.*

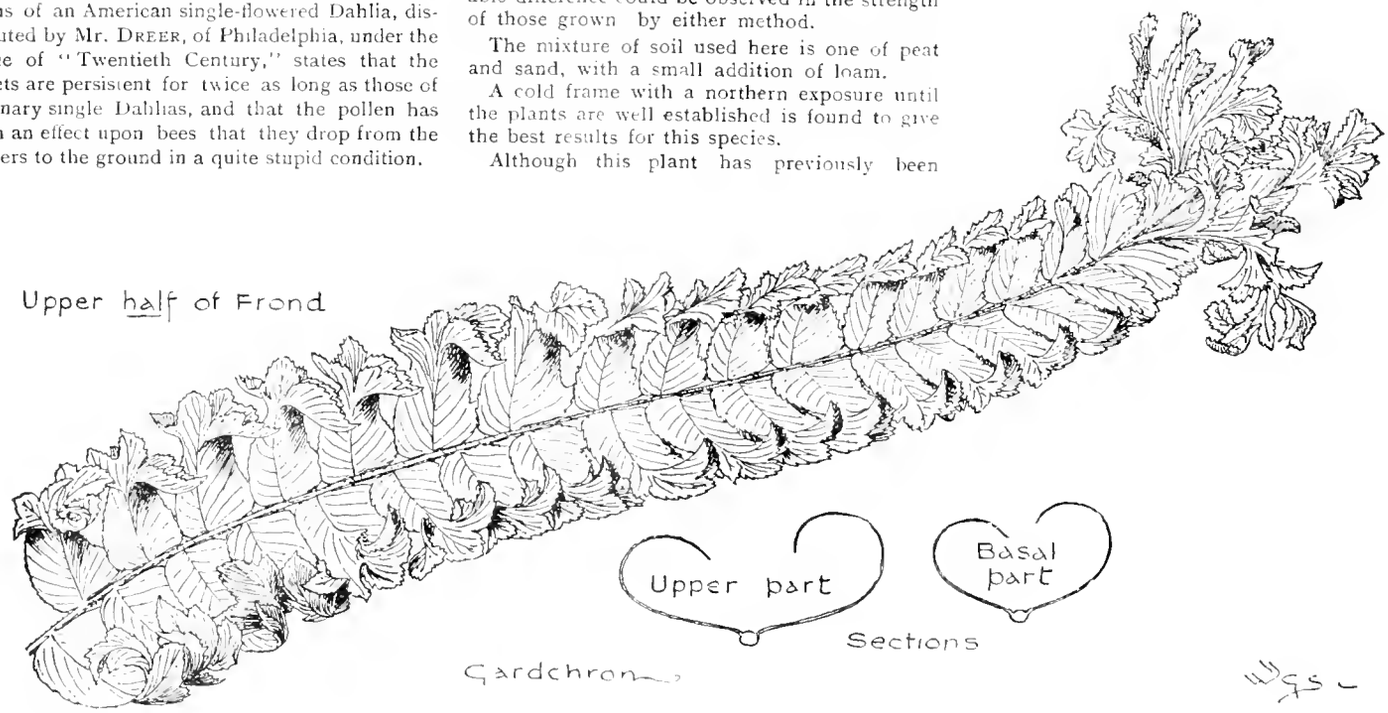


FIG. 82.—MIDDLE AND DISTAL PORTION OF THE FROND OF NEPHROLEPIS EXALTATA VAR. CANALICULATA.

Publications Received.—*Guide to the Experimental Plots at the Rothamsted Experimental Station, Harpenden (1906)*, price 1s.—*The Midland Agricultural and Dairy College*—reports on experiments with crops and stock.—*Kew Bulletin*, containing among other matters, an article relating to diseased Apples and Melons from the Cape of Good Hope, notes on Sydney Botanic Gardens, Irish Gardens, and descriptions of new plants.—*Travaux Scientifiques de L'Université de Rennes, Tome II., 1905.*—*A Year in my Garden*, by Mrs. Arthur Tuckett, published by Melville & Mullen, Melbourne, price 5s.—*A Book of English Gardens*, by M. R. Gloag, illustrated by Katherine Montagu Wyatt, and published by Methuen & Co., price 10s. 6d.—*Practical Trapping of Vermin and Birds*, by W. Carnegie, published by L. Upcott Gill, price 1s.

MECONOPSIS BELLA.

THIS species of Meconopsis is distinct from all others of the genus, and is the only known representative of the group Bellæ. It is a very diminutive little plant of perennial habit, with small radical leaves about an inch or little more in length. These are deeply divided, and have been well described as Corydalis-like by Dr. Prain. They form a small cushion upon the Prain. They form a small cushion upon the soil.

The plant now flowering here (see fig. 81, p. 198) has one opened flower, with

grown, this is the first occasion of its having flowered, so far as is known. Perhaps, with a race of plants raised from British-grown seed, the stock may become more naturalised to our climatic conditions, and consequently stronger. Should this be so the species will soon become more common in our gardens. It is figured in the *Annals of the Calcutta Botanic Garden* in part one of Vol. IX., and is a native of the Eastern Himalaya, at an elevation of 12,000 or more feet. *R. L. Harrow, Royal Botanic Garden, Edinburgh, August, 1906.* [See also an article by Dr. Prain on the species of Meconopsis which was published in the *Gardeners' Chronicle* for June 17, 1905.—ED.]

NEPHROLEPIS EXALTATA VAR. CANALICULATA.

THIS is a recent "sport" introduced by Mr. H. B. May which recently received an Award of Merit from the Floral Committee of the Royal Horticultural Society. It is quite distinct from the numerous other varieties of the species which have originated of late years, the fronds being not merely furcate or cristate, as in previous forms, but they are also symmetrically narrowed. The pinnæ are incurved, bearing somewhat contested

STRAWBERRIES IN 1906.

OWING to the late frosts and the general cold weather in spring time, picking did not commence as early in the season as is usual, and the dry weather during June and July caused the crops to finish rapidly. Many of the "King" berries were frosted, thus the early and the mid-season crops were ready almost simultaneously. Kentish growers appear well satisfied with the season's results, although at one time there was a glut. I find that the variety Sir J. Paxton still remains the favourite, but Royal Sovereign precedes it by about seven days and commands much favour. Laxton's Fillbasket has given great satisfaction, and "The Laxton" has also cropped freely, and, as one grower significantly remarked, "We don't eat them ourselves," the bulk of crop being the chief consideration. The dry season favoured this variety, which is remarkable for its cropping qualities. The Bedford Champion is under trial and will be a great gain in producing those "giant" berries which sell so readily in punnets. Mildew has been rather troublesome in North Kent. In dealing with our own field-grown plants, we crop a limited number only, as we grow principally for a supply of plants. Royal Sovereign

was free from mildew and gave us fine crops; the fruits from Sir J. Paxton were unusually large and handsome; President—still one of the best main garden sorts—was crippled by frost, and the fruits of Vicomtesse Hericart de Thury were smaller than is usual. Some of the older kinds were not so fine as they were in 1905, notably Goliath, Eleanor, Elton Pine, and Waterloo. The heaviest cropper was the pinkish white Louis Gauthier, some of the "king" berries being 2ozs. in weight, and the flavour was most refreshing; British Queen and Dr. Hogg both gave extra large berries; the quality of these varieties compensates for a small crop, as they are still far the best flavoured Strawberries. Of the newer varieties, Trafalgar produced fair results, but I do not think it has come to stay. Laxton's Fillbasket is a variety all gardeners should grow; the crop is enormous and the flavour very rich. The Bedford and Bedford Champion gave a few very large fruits, but have not yet made themselves at home with us; other growers, however, speak well of them. Reward is a very rich, mulberry-fleshed, late variety, but the crop is small with us. These three last named varieties may do better another year. The finest late Strawberry is Givon's Prolific, and I am pleased to find growers in all parts appreciate it, as I was the first to call attention to this remarkable variety, which begins to fruit after other kinds have finished. A client informs me he gathered berries weighing seven to the pound. The flavour is very rich and the leaves cover the fruit, an important point in hot weather. The plants crop for a long period, making our gatherings last over six weeks.

Messrs. Laxton are to be congratulated on their new "Laxton's Latest," an immense mulberry-coloured fruit of very rich flavour and of firm texture and one suitable for travelling. One berry furnished me with four bites (!) which gives some idea of the size of the individual fruits. This and Veitch's President Loubet render the growing of Waterloo unnecessary. Laxton's Latest must not be confounded with Latest of All, which I have discarded owing to its liability to attack by red spider and the fruits not ripening thoroughly. It is scarcely necessary to add that all these late kinds are greatly benefited by a good application of liquid manure directly the flowers have set, the stimulant to be applied well away from the centres of the plants. Old varieties of Strawberries "die hard," and we are asked at times for such old-fashioned kinds as Myatt's Eliza, Keen's Seedling, Black Prince, Laxton's Noble, and others. It is surely a waste of time and land to grow these old kinds, when in newer introductions we have all that can be desired in quantity of crop, vigour of plant, and flavour of berry.

The one lesson we have noted in the dry season of 1906 is, that in order to secure a good crop, deep cultivation of the soil and ample manurings at the time of trenching are essential. We have suffered much delay in the production of young plants by reason of the drought, in consequence of which the runners have not formed freely, but I am of opinion that planting any time in September will give favourable results. The occurrence of rain in certain districts causes growers in those parts to become anxious to have their new beds planted, although the soil may be dust-dry where the plants are grown. It would be far better for the planter to wait for well-rooted runners than to risk planting them when in an immature state.

One difficulty in writing on Strawberries is that the kinds vary on different soils. I have therefore confined my remarks to those varieties that are generally successful everywhere. *George Bunyard, Maidstone.*

NEW INVENTIONS.

A NEW PLANT STAND.

FIG. 83 illustrates an appliance known as Bound's Patent Telescopic Tripod Plant Stand for exhibiting or staging plants at flower shows or in the conservatory, &c. The principal advantage in this stand is its adjustability, for by its means the plant can be raised or lowered at will, and thus be exposed to the best advantage. It will be readily seen that the stand can be closed to occupy a small space, much after the manner of a photographic tripod, whilst its rigidity is remarkable. In one of the groups of Orchids shown at the R.H.S. meeting on Tuesday last, the plants were raised by this means. The makers are Messrs. Wm. Wood & Son, Ltd., Wood Green, N.

HOME CORRESPONDENCE.

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

APPLE EARLY WHITE TRANSPARENT (see p. 154)—I have known this excellent variety for a period of more than 20 years, and I have often

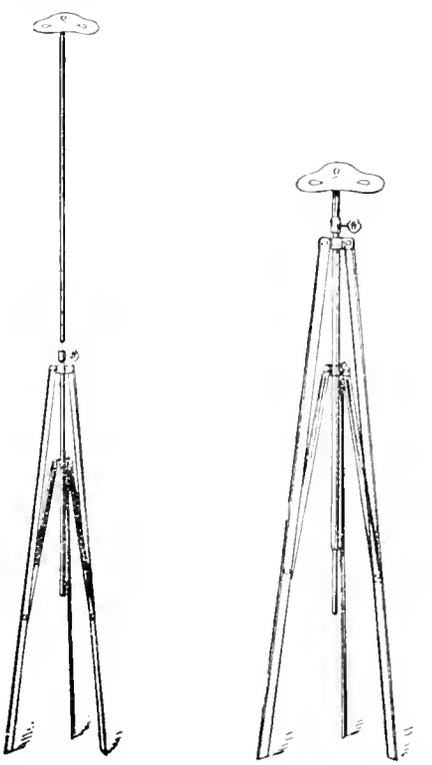


FIG. 83.—BOUND'S TELESCOPIC PLANT STAND, SHOWING ITS MINIMUM AND EXTREME HEIGHT.

wondered why it is not more largely grown; perhaps one reason against its culture is its white transparent skin which is easily bruised. This Apple is one of the few varieties introduced from Poland, but what name it bears in that country I do not know. It ripens during August and September. The tree is hardy and an excellent cropper, differing in the former respect from Calville Blanche, a French variety, whose growths are rather tender, and the tree does not succeed well except in warm localities. Early White Transparent keeps well, and I have had it in good condition as late as the end of February. One seldom hears of or sees that very large Russian kind Winintza Rambour. When well grown, fruits of this variety rival a large specimen of Peasgood's Nonsuch, and both the quality and appearance are first class. Many Russian varieties of Apples have the same white, waxy appearance seen in Early White Transparent. *W. H. Clarke, Oxon.*

PEACH CULTURE OUT-OF-DOORS.—I agree with Mr. Ward (p. 167), that "blister" in Peaches is, to a great extent, preventable, not by netting at the critical period to which *North Devon* alludes, but by having the trees in a clean, healthy condition in early spring-time and by giving them proper attention in early summer. Quite recently I inspected a number of large Peach and Nectarine trees in Mr. P. Veitch's garden at Exeter, and a healthier and more regularly-fruited lot of trees I do not wish to see. The foliage was ample and even, the fruit plentiful, large, and well-coloured, and the trees generally in splendid health. The large trees were trained on a wall 24 feet high, and this they had well covered to a height of 16 feet. The smaller trees were on a wall 8 feet high, and these were equally healthy and equally well-fruited. The larger ones had a clean stem of 5 feet. The Peaches were of the varieties Early Albert, Early Rivers, Waterloo, Hales' Early, Dymond, Sea Eagle, Noblesse, Princess of Wales, and Late Devonian; the Nectarines, Lord Napier, Precoce de Croncels, &c., all of which were bearing good crops of fine fruit. *A. H.*

——On page 184, *D.* states that the late Mr. Lindsay used to grow Peaches in these gardens without any protection, but I may say that for the past 10 years the trees have always been protected with a board coping, and with nets hung from the boards to the ground. Even with this slight protection in this favoured locality our trees are subject to "blister," though only slightly, and after the diseased leaves have been picked off the trees soon recover themselves. This year we have had a splendid lot of Peaches outside, numbering about 3,000 fine fruits. The very hot weather of the past few days completely spoiled many of the fruits, for wherever they were exposed they were burned by the sun. *Henry. H. Jones, Ditton Park Gardens, Slough.*

VITALITY OF SEEDS AND ROOTS.—Last year a clearance was made in a much overgrown and neglected garden that is surrounded by dense woodland, and had in fact become part of the woodland itself. It is known that before these operations were commenced, the garden had been untouched since the year 1860, at least, and that for certainly 25 years it had continued practically an impenetrable thicket, mainly composed of Rhododendrons. Following the admission of light and air consequent on last year's clearance, a great number of garden plants appeared this season, and many have flowered. I give the names of these plants below, from which it will be seen that there are annual, biennial, and perennial bulbous plants among them. The blue Lobelia, which is not hardy, is freely sprinkled amongst the grass and weeds. That this is the first appearance of these plants for many years is, I think, indisputable. The Rhododendrons, Brambles, &c., would permit nothing to grow under them, as those still standing testify, and the more open spots have been too keenly and constantly scrutinised by the keen eyes of botanists to allow any strange plants to appear unnoticed. Owing to the number of species occurring, I think it is safe to say that they cannot have been brought by birds and other natural agencies since last year's clearance; and as they have certainly not been accidentally introduced by man during the recent work there, I can only suppose that they are remnants of the original garden, and have lain dormant as seeds or roots for probably 50 years. This seems almost incredible, and if anyone can quote similar experiences or throw any light on the matter I shall be glad. The list of plants is as follows:—Lobelia (blue, bedding), Opium Poppies (Papaver somniferum), Œnothera biennis, Antirrhinums, Montbretia, Oxalis corniculata (and a yellow Oxalis, 8 inches high), Pansies (garden), Saxifraga granulata plena, Lilium, Mimulus luteus, M. moschatus, Leucoium æstivum, Polygonum cuspidatum, Pulmonaria sp., Black Currant (seedling), Lathyrus latifolius, Campanula latifolia and Pyrethrum aureum. *Harold Evans, Llanishen, near Cardiff.*

FERN-CULTURE FOR TOWN DWELLERS.—In *The Times* of August 25 Mr. Francis George Heath contributed an article, under the above heading, in which, after dilating on the beauty of our native wild Ferns, he advocates their purchase from street hawkers. Naturally such an incitement to the vandalism which all true Fern lovers deplore has evoked protests from several quarters, which Mr. Heath imputed to a misconception of his intention and ignorance of Fern culture, the latter since one of the correspondents maintained that the plants would not flourish. Obviously, however, such advice can only mean one thing, for if the peripatetic, Fern-hawking tramp or costermonger be encouraged by purchasing his plants, the demand can only be met by the denudation of our Ferny lanes, woods, and other favourable habitats, which are already so seriously raided in many places that stringent bye-laws are

needed for their protection from utter extermination, and numerous prosecutions have resulted. No one who has ever seen a collection of the far and away more beautiful types into which the normal forms have sported, could subsequently devote his pen to advocating, in book after book, the culture of the merely raw material whence the true Fern hunter derives his acquisitions. Mr. Heath's books, though with all-embracing titles such as the *Fern Paradise* in the first place and the *Fern World* in the second, treat alone of some forty odd specific forms. Two bulky volumes treat of the number cited, and yet in the *Fern Paradise*, under the head of the common Polypody, there is not the faintest allusion even to such an old and beautiful type as P. v. cambricum, the Welsh Polypody, and the same with all the other species, of some of which there are hundreds of distinct types, some merely curious and interesting, but most of them much more beautiful than the normal, though quite as hardy and as easily cultivated. Even of the forty odd species Mr. Heath only cites about half a dozen in his *Times* article as amenable to town culture, and these are already found in thousands of town gardens in monotonous profusion painful to the connoisseur. As Mr. Heath disclaims the intention of fostering the vandalism in question, we would ask him what is the meaning of the following extract from his *Fern Paradise*, p. 155: "Who could resist the temptation of . . . impounding yon jutting clumps of Fern roots Osmunda, Hard Fern, and Mountain Buckler Fern? . . . . Nature asks no questions, demands no penalties for our spoliation, but freely gives us up these wild and beautiful plants"? And again, p. 189, "No Fern is so plentifully vended in the London streets as are Polypody, for Epping Forest—that delightful strip of greenwood—furnishes the plant in thousands." That was published in 1875; where are the thousands now? What is required to cure this destruction is not the encouragement such pronouncements involve, but the education of the popular mind in the appreciation of the varietal forms. These, as we have said, are generally much more beautiful than the common ones, and their acquisition involves no vandalism since they can be obtained in a legitimate way by purchase from those who raise them from spores or by other propagative means. Most of them are procurable at very moderate prices, and would be, if popularised, cheaper still and within the compass of the poorest, especially as, once acquired, they are practically everlasting if properly cared for. No one who has once formed a collection of these ever grows the common ones again, and we have only to visit the Midlands and Black Country, where varieties are recognised, to see how fine specimens appear in cottage gardens and windows, while the common ones, except when rooted up wholesale by vandalistic villagers or peripatetic tramps for the market, are left severely alone. In conclusion, by way of contrast to the Fern-raiding tripper or other ruthless collector, we may point to the fact that the Fern hunter proper, *i.e.* the variety hunter, is happy if he secures a dozen plants in a week. Having secured them, he may be relied upon to propagate and distribute them, thus multiplying his acquisitions for the general benefit instead of rooting up wholesale with the almost assured prospect that not one in a thousand will become a "thing of beauty," much less "a joy for ever," as in the converse case. Our own last find was a tiny Blechnum (Hard Fern), 30 years ago, in a stone dyke on Exmoor. In two or three years 300 plants were distributed and a fine specimen still decorates our Fernery. *Chas. T. Druery, V.M.H., F.L.S.*

THE EFFECT OF ETHER ON PLANTS.—Numerous experiments have recently been made at the Cornell University to determine the effects of ether upon certain plants under cultivation. Aquilegia, Astilbe japonica and various bulbous plants were treated. Professor CRAIG, who superintended the experiments, reported that Lilacs yielded the best results; Cydonia japonica and Deutzias were less precocious in flowering; Astilbe proved very successful, while on such herbaceous plants as Aquilegias and Kindle has ether appears to have little or no effect. Lilium Harrisi (longiflorum var.) bloomed from one to three weeks in advance of the non-etherised bulbs. Rhubarb under the treatment was ready sooner than the untreated plants, and was far more abundant. Asparagus yielded profuse growth and was increased in stature, but was unusable.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 11.—The ordinary fortnightly meeting of the committees took place on Tuesday last, in the Society's Hall, Vincent Square, Westminster. Dahlias of all sections constituted the dominant feature of the display, and the collections of these flowers produced an effect of the showiest character. Three varieties, all of them belonging to the Cactus type, were selected by the FLORAL COMMITTEE as worthy Awards of Merit. The only other award made by this committee was that of an Award of Merit to a variety of early-flowering Chrysanthemum: this type of the flower is now one of the features at these shows, and they may be expected to become more numerous at each succeeding meeting until November.

The ORCHID COMMITTEE recommended one Botanical Certificate and three Awards of Merit to novelties, the display of these plants being of less extent than usual.

The FRUIT AND VEGETABLE COMMITTEE did not make any award other than medals for collections of fruits, and a remarkable collection of Turnips.

The SCIENTIFIC COMMITTEE did not meet on this occasion.

At a meeting of Fellows in the afternoon, eleven new Fellows were elected, and Mr. T. S. Dymond delivered a lecture on "The Education of the Cottage Gardener."

Floral Committee.

Present:—W. Marshall, Esq., Chairman, and Messrs. H. B. May, Geo. Nicholson, Jno. Green, G. Reuthe, C. R. Fielder, Jno. Jennings, W. Howe, R. Hooper Pearson, Chas. Jeffries, Chas. Dixon, Jas. Douglas, R. C. R. Nevill, W. Cuthbertson, F. H. Jenkins, T. W. Turner, Geo. Paul, J. W. Barr, Ed. Mawley, and C. T. Druery.

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, showed a splendid collection of Gloxinieæ, all the plants being beautifully developed specimens. There were rare species and choice forms of these beautiful ferns, such as G. decarpa, G. d. longipinnata, G. Speluncæ, the climbing G. Mendelli, G. rupestris, G. flabellata, G. semivestita and many others. (Silver Gilt Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, showed some of the large petalled decorative Dahlias, among which we noticed the beautiful Souvenir de D. Donzon, a crimson scarlet variety, and one admirably suitable for a large flower bed. The same firm also displayed a collection of Gaillardias, a nice strain of Zinnias, and some good Chinese Asters. (Silver Banksian Medal.)

Messrs. G. PAUL & SONS, The Old Nurseries, Cheshunt, staged a miscellaneous collection of many interesting plants. Some were ornamental forms of trees and shrubs, others were shown for their fruits and flowers. Hypericum oblongifolium is a showy shrub, and produces its yellow flowers in plenty. The grand-leaved Oak, Quercus glandulifera (Alberti) was noticed, also the curious Rosa sericea pteracantha, with its large ornamental spines. Clerodendron trichotomum was nicely in flower. (Silver Banksian Medal.)

Mr. A. J. CLIMPTON, Station Road, Harpenden, Herts., showed a new bedding variety of Coleus named The Decorator. The plants are dwarf, with cut leaves, that are yellow with a deep green margin.

Messrs. W. WELLS & Co., Merstham, Surrey, showed summer-flowering Chrysanthemums from the open garden, the best of which were George Bowness (bronze), Rabbie Burns, Mme. Block (bronze), Treckwood Early (white), and Guinea Gold.

Mr. B. LADHAMS, Shirley, Southampton, showed a number of hybrids from Lobelia syphilitica.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, filled one of the corners of the hall with a group of showy Clematis in small pots. They were plunged in baskets in their several varieties, which included Marcel Moser (mauve), Nellie Moser, Beauty of Worcester (blue), the beautiful C. Jackmanii rubens, the tiny white-flowered Viticella alba and V. rubra. (Bronze Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, displayed a finely-flowered batch of Leonotis leonurus—the Lion's Tail, and several specimens of the large flowering variety of Crowea latifolia. (Silver Banksian Medal.)

Mr. DAVID RUSSELL, Essex Nurseries, Brentwood, staged a very comprehensive collection of hardy Heaths, including many forms of our British species.

Messrs. JOHN LAING & SONS, Forest Hill, London, S.E., showed a number of small Codiæums (Crotons) in pots. They were well cultivated, and the varieties embraced most of the kinds usually grown.

Messrs. HUGH LOW & SONS, Bush Hill Park, Enfield, N., staged a bright group of Carnations, nicely arranged in tall vases.

Messrs. GUNN & SONS, Olton, Birmingham, set up a group of border Phloxes, in all the best kinds. (Silver Flora Medal.)

Several large exhibits of Dahlias were staged. Messrs. CARTER, PAGE & Co., 52-53, London Wall, E.C., showed over 100 varieties of these seasonable flowers. The collection included all the types save the show. Cactus kinds predominated, and these were arranged in baskets with a setting of Ferns, Grasses, sprays of Ampelopsis foliage, &c. At either end of the group, which ran the whole length of the hall opposite the clock, were single and pompon varieties. We have no space to enumerate the many varieties shown, but may remark that they included all the more notable kinds, and most of last season's novelties. (Gold Medal.)

Messrs. HOBBIES, LTD., Dereham Nurseries, Norfolk, showed a pretty exhibit of Dahlias arranged on fancy stands, and relieved with Ferns and other suitable greenery. H. Shoesmith, Mrs. MacMillan, The Editor, William Marshall, and other choice varieties were well displayed. Opposite the group, in tall stands, was a number of varieties of the large flowered "Pæony" type. (Silver Flora Medal.)

Mr. JOHN E. KNIGHT, Tettenhall Nurseries, Wolverhampton, arranged a very pleasing exhibit of Dahlias, using fancy bamboo epergnes and glass vases for their display. Many single flowers were also displayed on boards, and, taken together, the group was one of considerable beauty, and was certainly arranged to the best advantage. (Silver Flora Medal.)

Messrs. J. CHEAL & SONS, Crawley, showed single, show, Cactus and pompon Dahlias in great variety. Especially good were the single flowers. (Silver Banksian Medal.)

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, and Messrs. J. STREDWICK & SONS, Silverhill Park Nurseries, St. Leonards-on-Sea, exhibited new varieties of Dahlias.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., had an assortment of seasonable border flowers and pot plants of Nerine Fothergilli major, and a batch of the early flowering Crocus ornatus.

Messrs. WALLACE & Co., Kilnfield Nurseries, Colchester, exhibited many choice border flowers, among which were seen the large-flowered Montbretia Prometheus, and another named Hereward, of bright yellow shade.

Messrs. JOHN PEED & SONS, West Norwood, London, staged border flowers and hardy succulent plants.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., put up a well-arranged exhibit of hardy flowers that embraced most of the best kinds now in season. (Silver Flora Medal.)

Mr. AMOS PERRY, Winchmore Hill and Enfield, Middlesex, showed hardy flowers and Nymphæas in variety. (Silver Flora Medal.)

Messrs. WARE, LTD., Feltham, staged a pretty assortment of border flowers, among which were noticed many old garden favourites. (Bronze Flora Medal.)

AWARDS OF MERIT.

Chrysanthemum "*Ethel*."—An early flowering border variety with light, buff-yellow coloured flowers, which measure about 4½ inches in diameter. The height of the plants shown was about 16 inches, and they were very freely flowered. Shown by Messrs. W. WELLS & Co.

Cactus Dahlia "*Gazelle*."—This is a very neat flower, composed of rather short florets, each slightly incurved towards the centre. For the type, this flower is somewhat formal, but very refined. The colour is a rich shade of mauve, with a white centre.

Cactus Dahlia Rev. J. Hall.—This is a large, spreading, somewhat thin flower, with narrow fluted and slightly twisted florets. The colour is of rosy crimson. This and the preceding variety were shown by Messrs. STREDWICK & SON.

Cactus Dahlia Hamlet.—A large flower, of which the florets are spreading rather than incurved. The colour is bright red. Shown by Messrs. J. CARTER & SON, Woking.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), W. Boxall, W. Bolton, Jeremiah Colman, R. G. Thwaites, H. Little, W. H. White, W. H. Young, H. A. Tracy, G. F. Moore, Francis Wellesley, Harry J. Veitch, and Major G. L. Holford, C.I.E., C.V.O.

H. S. GOODSON, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day), had a very effective and well-arranged group, at the back of which were graceful Palms, among which appeared the slender spikes of the bright yellow Oncidium varicosum, some exceptionally good forms of Lælio-Cattleya elegans, and a plant of the rare Dendrobium Williamsianum, with a spray of flowers somewhat resembling D. Phalænopsis, but, with white sepals and petals and a light violet-coloured lip. At one end of the group was a selection of Lælio-Cattleya bletchleyensis, at the other, several very fine forms of Cattleya Iris, and arranged with them were Odontoglossum crispum, Brassia brachiata, Miltonia Bleuana, various Cypripediums and Cattleyas, the brightly-tinted Lælio-Cattleya Massangeana Harry Goodson, which had previously secured an award of merit; L.-C. Parysatis, and others. (Silver Flora Medal.)

Messrs. SANDER & SONS, St. Albans, staged an extensive group, which included several of their dwarf and showy type of Cattleya Iris inversa, the variety amabile being a very finely coloured form with a large ruby-purple lip. Of the Lælio-Cattleyas, L.-C. Ingrami splendens was remarkable for its fine dark maroon-purple lip, and good forms of L.-C. elegans, L.-C. bletchleyensis, L.-C. callistoglossa, Cattleya Pittiana, C. Lord Rothschild, C. Mrs. J. W. Whiteley, and various good Cypripediums were included. Of botanical interest were a fine plant of Lælia monophylla, with over a dozen orange-coloured flowers; Stanhopea Wardii, Pholidota articulata, P. conchoidea, Cycnoches ventricosa (with a raceme of six singular flowers), and a good form of Cypripedium Fairrieanum. (Silver Flora Medal.)

Messrs. CHARLESWORTH & CO., Heaton, Bradford, arranged a very handsome group in the centre of which were twenty-five finely-flowered plants of their Cattleya Iris, which is a general favourite with all Orchid growers on account of the remarkable variation in the tints of the flowers, which are, however, always showy. Some of the plants staged had bronzy orange sepals and petals, and carmine-crimson lip, others reddish-olive sepals and petals and ruby-purple lip, and no two were exactly alike. So handsome and dissimilar are the forms of Cattleya Iris, that eight distinct varieties have already received awards at the Royal Horticultural Society. On each side of the Cattleyas were selections of the rosy-lilac, fringed-lipped Brasso-Cattleya Mad. Chas. Maron, with two of the darker rose B.-C. Heatonensis and one of the singularly coloured Brasso-Lælio-Cattleya elegans-Digbyana. Among Lælio-Cattleyas were two dark forms of L.-C. Dominiana and several of the finely-coloured L.-C. Illustris, L.-C. Alcyone, Cattleya Vulcan, C. Germania, and of species noted were Trichopilia Turialva, Mormodes pardinum unicolor, Anguloa eburnea, and various Odontoglossums and Cypripediums. (Silver Flora Medal.)

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, had a good group, principally of species and varieties. Lælia purpurata Duckworthi was a very pretty form, nearly an albino, the white flowers having only a veining of purple on the lip. This variety is said to always flower at this season. At the back of the group were the graceful spikes of Oncidiums, including O. varicosum, O. incurvum O. microchilum, and a distinct form of O. Forbesii, with sparsely-spotted, yellow lip. Odontoglossum bictoniense album was represented by its best form, and Cattleya Gaskelliana alba, C. guttata, C. Loddigesii albens, C. Minucia, C. St. Gilles, C. Iris, and others were included. Of Cypripediums, C. Youngiano-superbiens and C. Lawrenceanum Hyeanum were the best.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), showed a pretty hybrid between Cattleya bicolor and C. Iris (bicolor × Dowiana aurea), in which the form and size have naturally reverted towards C. bicolor, but with the bright colouring of C. Iris. The sepals and petals were light purplish brown, and the lip purplish-crimson, with a slight white margin.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), again showed the noble Brasso-Cattleya Mrs. Francis Wellesley, illustrated in the *Gardeners' Chronicle* on June 30 last, and which still holds the record for size and the delicacy of its pretty rose tint. The finely-displayed, fringed labellum was still finer than when last shown; also Lælio-Cattleya Duvaliana Westfield variety, with sepals and petals white, tinged with pale lilac; lip pale yellow at the base and with glowing purple front; also the pretty L.-C. Mrs. de Vere Beauclerk. (See Awards.)

AWARDS.

AWARDS OF MERIT.

Lælio-Cattleya Sunset (L. Jongheana × C. Percivaliana), from Major G. L. HOLFORD, Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A very charming hybrid, with flowers nearly as large as C. labiata, the labellum being formed like C. Percivaliana, but improved by the pretty undulate edge of L. Jongheana. Sepals and petals broad and flat, of a delicate pale lilac tint, the veining being darkest. Lip clear, bright orange colour with a small, dark, bronzy-red blotch and several radiating, short lines in the centre. Margin white, with a narrow pale rose edge much crimped.

Lælio-Cattleya Mrs. de Vere Beauclerk (L.-C. Ingrami × C. Trianæi), from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins). A very handsome hybrid with well-rounded flower, the petals of which are very broad, and the whole flower finely tinted. Sepals and petals white, tinged and slightly veined with rosy-lilac, the petals crimped on the outer half and rather darker in tint than the sepals. Disc of the lip dark orange, with minute spots and lines of red-brown at the base. Front claret-purple, with darker lines radiating from the orange-coloured disc.

Lælio-Cattleya Woodfordiensis (L. crispa × L.-C. C. G. Roebling) (L. purpurata alba × C. Gaskelliana), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). A very bright and effective hybrid, in which three fine species unite, the result being a floriferous plant with flowers much resembling those of L.-C. exoniensis, but larger. The finely-grown specimen had two spikes of three and two flowers respectively. Sepals and petals white, tinged with rose; the showy front of the lip ruby-purple, with lavender margin.

BOTANICAL CERTIFICATE.

Polystachya grandiflora, from Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White). A very extraordinary species from tropical Africa, and the largest of the genus. The flowers are produced on upright spikes, and follow in succession, about an inch and a half long, wax-like in texture, whitish with purple markings on the lip and purplish tinge on the outside of the sepals.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq. (in the chair), and Messrs. S. Mortimer, Alex. Dean, Geo. Keif, W. Pope, R. Lye, H. Markham, Horace J. Wright, W. Barnes, J. Davis, John Lyne, Geo. Reynolds, J. Jaques, P. Tucker, W. Poupart, H. Somers Rivers, Owen Thomas, and A. H. Pearson.

There were several miscellaneous exhibits before the Committee, but none received an award. Mr. J. CROOK, of Forde Abbey Gardens, Chard, sent haulm and gathered pods of culinary Peas Autocrat and Gladiator, the Peas being in good condition for the kitchen. These had been shown to illustrate how the Pea mildew had been destroyed by spraying with a fungicide. Mr. F. M. BRADLEY, Church Street, Peterborough, exhibited a white or cream-coloured Cucumber; several varieties of Apples were shown, also a good dish of Doyenné Boussoch Pear, and a Melon came from the Society's gardens at Wisley, but it had little flavour to recommend it.

Messrs DOBBIE & Co., Rothesay, N.B., staged a remarkably good collection of Turnips, in about 60 varieties. The fine quality of the roots was freely commented upon, and the heavier rainfall of Scotland this summer was no doubt largely responsible for such a splendid show. The display was very representative, all classes of this important vegetable being included. Perhaps the finest of all was Dobbie's Model White, a beautiful white Turnip of perfect round shape, solid and with little tap root. A golden-coloured variety forming a good companion to this was Dobbie's Golden Ball, it being almost a replica, save in colour. Cattell's Silver Ball and White Globe are good white varieties. Then there were "green tops," Stone Marble, Top Stone, All-the-Year-Round, and others equally as good; "purple tops," the Cowhorn type such as Long White Meaux, and Long Green and Long Red Tankard; varieties that were concave beneath and with scarcely any tap root, such as Yellow Perfection; the so-called black Turnips, resembling nothing so much as dark-skinned Parsnips, such as Chirk Castle, Black Stone and Black Long, and the grey Turnip, Grey Morigny, &c. In addition were many ornamental kinds such as the pretty Scarlet Kashmir and Prince Engalitscheff, the latter having wavy stripings of violet on a yellowish ground. (Gold Medal.)

Miss M. H. DODGE, Loseley Park, Guildford (gr. Mr. Steward), showed two dozen varieties of Potatos, all clear of skin, and of large size, perhaps too large for the best culinary use. The varieties embraced most of the new sorts that were prominent during the recent boom. (Silver Banksian Medal.)

The Rt. Hon. WALTER LONG, M.P., Rood Ashton, Trowbridge (gr. W. Strugnell), showed a collection of indoor and outdoor fruits. The exhibit, taken collectively, was a very fine one, and embraced Plums, Peaches, Melons, Pears, Cherries, Nuts, Apples, Tomatos, Figs, and Grapes. (Hogg Memorial Medal.)

Miss ADAMSON, South Villa, Regent's Park, N.W. (gr. Mr. Geo. Keif), exhibited a number of choice fruits, many of which were from pot grown trees. Melons, Grapes, Plums, Nectarines, Pears, &c., of good quality were included. (Silver Banksian Medal.)

Sir W. PEARSON, M.P., Paddockhurst, Worth, Sussex, showed nine large Melons, for which a Cultural Commendation was awarded.

NATIONAL DAHLIA.

SEPT. 6 and 7. In our last issue we were enabled to give the names of the prize winners in the principal classes. The exhibition may be said to be equal to the average standard of former shows of the society, the dry season notwithstanding, and the number of entries was but few short of the record number of last year.

The first five classes in the nurserymen's section, of which two were for show, two for fancy, and one for show and fancy Dahlias intermixed, were each represented by three displays. There was not much to choose in many cases between the various exhibits, and in the class for 48 blooms of distinct varieties the judges had to resort to careful pointing of each flower in the best two collections in order to arrive at their decisions. Some of the best blooms among show varieties were Daniel Cornish, James Cocker, William Powell, David Johnson, Miss Ormrod, Spitfire, and Chieftain. A magnificent specimen of this last-named variety was shown by Mr. WALKER in his 3rd prize exhibit. Among the "fancies" this same exhibitor had beautiful flowers of Dandy, Mrs. Saunders, John Forbes, Wm. Sheldon and Dorothy, while Mr. TRESEDER showed a magnificently-coloured flower of Peacock in his 2nd prize group. The popularity of the Cactus type of flower was evidenced all through the show, and more competition obtained in the classes for these flowers than in any other section. The premier classes in the nurserymen's section for Cactus Dahlias were those for 18 varieties in bunches of 6 blooms each, and for 48 blooms, distinct, and in each case the premier honours were carried off by Messrs. J. STREDWICK & SON. The flowers that won for them the 1st prize in the former class were a wonderful lot, including as they did no fewer than nine new varieties that had never before been displayed on the show board. Among this exhibit was found the premier bunch

of Cactus Dahlias in the nurserymen's section, in the variety Rev. Arthur Hall, a crimson-purple kind that is fully described below. Messrs. J. BURRELL & Co., who were 2nd in this class, showed three new varieties, and in addition had choice specimens of Harbour Lights, Elate (pink), J. B. Riding, and Alight. Class 9, for 24 Cactus Dahlias in distinct varieties, was strongly contested, nine exhibits being seen, in which the quality of the flowers was good throughout. The best exhibit in the great vase class saw popular varieties nicely arranged with coloured foliage—Bracken, Golden Elm, coloured Privet, Ampelopsis, &c., and berries—Mountain Ash, Snowberries, Berberis, &c. Some very good flowers were seen in the 2nd prize exhibit, notably those of Wm. Marshall and Mrs. Shoesmith, but the arrangement was not so pleasing.

Competing in the Pompon classes were seen the same old exhibitors of former years, Mr. CHAS. TURNER, Slough, winning in the larger class for 24 varieties in bunches of 10 blooms of each variety, while Mr. JOHN WALKER won in the smaller class for 12 varieties. A selection of the best flowers included Mignon (crimson magenta), Nerissa (bright pink), Elsa (white), Mars (scarlet), Little Mary (of perfect form), and Edina (yellow tipped with red in the centre florets).

The pretty single Dahlias were only represented by two exhibitors in each of the two classes provided for these flowers. Messrs. SEALE had, among others, charming flowers of Yellow Queen, Mavourneen (new, described below), Edie Oblan (pale velvety heliotrope fading to yellow in the centre of the flower), and Fortuna (yellow).

The enthusiasm shown by amateur members of recent years was well maintained, and in the amateur class for nine varieties of Cactus Dahlias there were no fewer than 15 entries; of this number 12 were staged, and so good was the general quality throughout the class that the judges recommended an extra prize. The Rev. ARTHUR BRIDGE carried off the premier prize, which included a silver challenge cup, but the next best two were so close in point of merit that the judges awarded them equal 2nd. The cup collection contained the premier bunch of Cactus Dahlias in the amateurs' section, in Fairy, a white, thin-petalled variety, with incurved segments. The top flower of the trio was a very promising bloom.

Mr. THOS. JONES, who is well-known in the Sweet Pea world, carried off the silver challenge cup for 24 show or fancy Dahlias intermixed, with good blooms that were easily 1st; indeed, there was not a weak flower among the two dozen. His best examples were Mrs. Seward, Standard, David Johnson (a grand flower), Duke of Fife, Marjory, and Blush Queen. Mr. H. BROWN, 171, North Street, Luton, Beds., showed the best "pompon," and Rev. ARTHUR BRIDGE the best "singles" in the amateurs' section.

A new class was provided for fancy Cactus Dahlias, a section represented by Cactus Dahlias with striped, spotted, or tipped markings. Messrs. STREDWICK were easily 1st, with an exhibit containing several new varieties, two of which were awarded Certificates of Merit. Messrs. STREDWICK showed 14 new flowers in all, every one of which possessed merit, although many were too much like existing varieties to gain recognition. They received certificates, however, for four new Cactus varieties, as will be seen below.

AWARDS.

CACTUS DAHLIAS.

Rev. Arthur Hall.—A variety of crimson purple shade, with a magenta reverse, which just shows on the tips of the petals. The segments are very thin, claw-like, and incurved. The flower is full and of large size.

Dr. G. G. Gray.—A large, well-shaped flower of bright fiery red or scarlet colour. The petals are very fine and incurved.

Diavolo.—This and the following variety belong to the fancy Cactus section. It is a striped flower on a yellow ground, slightly suffused with rose. The markings are chocolate-coloured, some of the florets having broad bars of this colour, while others are not so heavily marked.

Victor.—Another "Fancy Cactus," with very incurved and revolute florets that are striped with bright violet-purple on an almost white ground. As in the case of the last-named, some of the florets show heavier markings than others. All the above were shown by Messrs. STREDWICK.

SHOW DAHLIAS.

Gloria.—A very large flower of good form. The florets forming the centre of the flowers are flushed with heliotrope, which colour is slightly suffused through the older florets that are lighter in colour.

Claret Cup.—A medium-sized flower and one with remarkable colouring. The tip of each floret has a brown marking, and below is a magenta tint, which loses itself in the interior of the floret in a purple shade. Both these flowers were shown by Mr. S. MORTIMER.

SINGLE DAHLIA.

Mavourneen.—A flower of good form, and free from coarseness. The lower portion of the florets is rich crimson, the apex being of a magenta shade. The rich, dark, central portion of the flower is well set off by a cluster of golden-coloured stamens. Shown by Mr. SEALE.

POMPON DAHLIA.

White Perfection.—A miniature flower of first-class shape, with pure white florets. Shown by Mr. W. EACOTT, Addlestone, Surrey.

NON-COMPETITIVE EXHIBITS.

Pretty exhibits of Dahlias were shown by Messrs. HOBBIES, LTD., Dereham, Norfolk (Silver Gilt Medal); Messrs. H. CANNELL & SONS, Swanley (Crystal Palace Silver Medal); Mr. J. T. WEST, Tower Hill, Brentwood (Silver Gilt Medal); Mr. J. E. KNIGHT, Wolverhampton (Silver Medal); and Messrs. T. S. WARE, LTD., Feltham (Silver Gilt Medal). Messrs. PEED & SONS, Norwood, displayed Begonias, Gloxinias, and hardy flowers. (Crystal Palace Silver Medal).

ROYAL CALEDONIAN HORTICULTURAL.

SEPTEMBER 12, 13.—The autumn show of the above Society held in the Waverley Market, Edinburgh, proved a pleasant surprise, for the exhibits were not only numerous, but they were of remarkably good quality. Displays of cut flowers were especially numerous, and, although this show is principally noted for its displays of Grapes and other fruits, this year the cut flowers constituted an important feature, for they were shown in great quantities and were of excellent quality. Roses, Sweet Peas, and Carnations were all exhibited in extraordinary numbers, and they were of the finest quality. Other flowers were less noteworthy, because, perhaps, they were more common. Vegetables, as usual, were a good show, Mr. GIBSON'S collection being of superior merit.

DESSERT FRUIT.

The best collection of 10 dishes of dessert fruits was staged by Mr. Kirk (gr. to J. THOMSON-PATON, Esq., Norwood, Alloa). He had very fine Grapes, Pineapple, Melon, Dr. Jules Guyot Pear, Nectarines, Peaches, Plums, and Figs.

Mr. GOODACRE, Elvaston Castle Gardens, was awarded the first prize for 12 dishes of fruit. The exhibit included grand examples of Pears, Apples, Peaches, Nectarines, Plums, and Figs; 2nd, Mr. MCKINLAY, Wiest Park Gardens, Beds.

An attractive display resulted from the competition for a table of dessert fruit decorated with flowers in vases and epergnes. The highest number of points, 125½, was secured by Mr. J. H. Goodacre (gr. to the Earl of HARRINGTON, Elvaston Castle, Derby); Mr. D. Kidd (gr. to Lord ELPHINSTONE, Carberry Tower, Edinburgh) followed with 112 points; and Mr. T. Young (gr. to Sir. GEO. BULLOUGH, Kinloch Castle) was 3rd with 103½ points.

SCOTTISH CHALLENGE TROPHY FOR GRAPES.

The Grand Challenge Trophy for eight bunches of Grapes brought six competitors. The judges had an extremely difficult task to decide the winner, but, after much deliberation, the trophy was awarded to Mr. A. Kirk (gr. to J. THOMSON-PATON, Esq., Norwood, Alloa; 2nd, Mr. Goodacre (gr. to Earl HARRINGTON, Elvaston Castle); Mr. Beisant (gr. to Lady ARMISTEAD, Castle Huntly), last year's winner, gained 3rd prize; and Mr. W. J. Green (gr. to Sir C. PALMER, Grinkle Park, Yorkshire), 4th prize. There were 14 other classes for Grapes, and as many as 142 competitors entered, giving an average of over 10 exhibitors for each class. In all cases the bunches were large and well-shaped, while the individual berries were almost perfect.

Mr. PIRIE (Dalhousie Cast'e) had the best two bunches Muscat of Alexandria Grapes; Mr. GALLOWAY, of Gosford, Longniddry, being awarded the 2nd place. Mr. GOODACRE had the best single bunch of this variety; 2nd, Mr. GALLOWAY. Mr. ANDERSON, North Berwick, was 1st for two bunches of Black Hamburgh Grapes in a large class; 2nd, Mr. GORDON (Whauphill, Monreith). Mr. GORDON was 1st in the class for one bunch of the same variety, gaining with it also the Williams' Memorial Medal. There was also a keen competition in classes for single bunches of other varieties.

Eight bunches of Grapes.—Mr. KIRK, Alloa, was a good 1st with large, full clusters of Dr. Tisserand, Madresfield Court, Muscat of Alexandria, and Cooper's Black; 2nd, Mr. GOODACRE, with smaller bunches; 3rd, Mr. BEISANT, Castle Huntly.

Four bunches of Grapes.—Mr. MURRAY, Culzean Castle, was awarded the 1st prize for large bunches; 2nd, Mr. PORTER, Whiteinch, Cumberland, who had well-finished examples.

OTHER FRUITS.

There was a fair display of Apples and Pears, but, generally speaking, they lacked the high finish one is accustomed to see in southern displays. Plums, Peaches, Nectarines, Figs, and Melons formed a comparatively small display, but some good dishes were staged, and represented produce from various parts of the kingdom.

GROUP OF MISCELLANEOUS PLANTS.

Two competitors only entered for a group of miscellaneous plants. Mr. Davis (gr. to Col. STEWART RICHARDSON, Stanley, Perth) put up the best exhibit. The arrangement was bold and well executed, tall Codiæums (Crotons), Abutilons, and Humeas forming the principal features. 2nd, Mr. Wood (gr. to J. BUCHANAN, Esq., Canaan Lane).

Among the exhibits of specimen plants it was reminiscent of old times to see Fuchsias trained pyramid fashion and forming fine specimens 4 to 8 feet high, almost every plant being profusely flowered. For the best two plants the 1st prize went to Mr. A. Pryde (gr. to Mrs. MCLAREN, Newington House, Edinburgh); 2nd, Mr. AITKEN, Balerno; and Mr. D. Plenderleith (gr. to T. A. C. MORTIMER, Esq.) 3rd. For one specimen Fuchsia Mr. AITKEN won the 1st prize.

There were numerous other groups of pot plants, the most noticeable specimens being some fine Lilium lancifolium and L. auratum, Vallotas, and a grand collection of tuberous-rooting Begonias. There was keen competition in the classes for Begonias, of which some splendid examples in 10-inch and 12-inch pots were seen.

Trained plants of Lapagerias, Clerodendrons, Statices, Aroides, exotic Ferns, Codiæums (Crotons), Cycads, and Coleus were the chief subjects among the other classes for pot plants.

ROSES.

These flowers formed an exhibition in themselves, the great majority of the blooms being characterised by large size and rich colours, especially those of the dark varieties, wonderfully developed.

Nurserymen's Classes.—Messrs. J. COCKER & SONS, Aberdeen, were 1st for 24 varieties, their blooms being in perfect condition. They showed choice examples of H. Dickson, A. Colomb, S. M. Rodocanachi, Mrs. J. Laing, G. Pigneau, Frau K. Druschki, and others; 2nd, Mr. H. DICKSON, Belfast; 3rd, Messrs. CROLL, Dundee.

Eight competitors staged in the class for 24 Tea Roses, the blooms being equally as good, but in some instances less fresh than in the above class. Mr. DICKSON was 1st with a grand lot, and he was followed by Messrs. COCKER.

Mr. DICKSON was also 1st for 12 blooms of a scarlet variety, having the variety H. Dickson. For the similar class for 12 blooms of a pink variety, Messrs. COCKER won with examples of Mrs. J. Laing, and for 12 white blooms Mr. DICKSON was again 1st, with Frau K. Druschki. Messrs. CROLL were 1st for eight vases of Tea Roses, with clear good blooms; 2nd, Messrs. SIMPSONS, Dundee.

Messrs. FERGUSON, Dunfermline, were 1st for 12 decorative Roses.

In the class reserved for gardeners, Roses were also very fine. Mr. RUSSELL, Newton Mearns, was 1st for 24 blooms of fine quality. This was a good class, no fewer than 12 exhibits being seen. For 12 hybrid Teas, Mr. DALGORM, Arbroath, won. There was also a good competition in other smaller classes.

A class was provided for a collection of Roses arranged on tables. Messrs. FERGUSON secured the 1st place with masses of blooms that were well up to an exhibition standard. Messrs. COCKER followed with a fine lot of blooms; 3rd, Messrs. SIMPSON, Dundee.

ORCHIDS.

Only a few of these plants were shown. Mr. A. Findlay (gr. to A. DRYBROUGH, Gogar Park), took 1st prize for three Cypripediums, one called "Transvaal" (Rothschildianum × Chamberlainianum) being very distinct. Mr. T. Dewar (gr. to W. T. ROY, Esq., Perth), gained the 1st prize for four Orchids; 2nd, Mr. FINDLAY; 3rd, Mr. G. Wood (gr. to J. BUCHANAN, Edinburgh). Arachnanthe Lowi won the 1st prize for Miss NELSON, Salisbury Green (gr. Mr. Henderson) in the class for one plant. Messrs. CHARLESWORTH & Co., Bradford, exhibited cut flowers, showing some of their finest hybrids; and Mr. D. McLEOD, Chorltum-cum-Hardy, showed fine Cypripediums, and several Orchid portraits.

MISCELLANEOUS CUT FLOWERS.

Sweet Peas, next to Roses, formed the chief display in the section for cut flowers. Twenty-six competitors staged in the class for nine varieties, and 29 in that for six; Mr. MALCOLM, Duns, being first in both classes, with Mr. GIBSON, Duns, 2nd in the class for nine, and Mr. WILSON, Selkirk, 2nd for six varieties. The competition was very close, but Mr. MALCOLM'S flowers excelled in colouring. Queen of Norway, Queen Alexandra, Etta Dyke, Henry Eckford, and John Ingman were especially fine.

Gladioli of remarkably fine quality were seen. Mr. Lawrie (gr. to M. SMITH, Esq., Prestwick), to whom the 1st prize for 12 spikes was awarded, had really grand examples. Mr. VEITCH, Carlisle, was a close second in this class. Mr. BENNET, Tweedmouth, had the best six spikes in the smaller class.

Dahlias also made an especially good show. Mr. SUTHERLAND, Kirkintilloch, was 1st in the class for 12 show varieties of Dahlias; Mr. JENKINS, Cambuslang, 1st for six show; Mr. PAUL, Killearn, 1st for 12 Cactus, and also for six Cactus varieties; and Mr. SUTHERLAND 1st for six varieties of Cactus Dahlias arranged in bunches. Carnations and Picotees were even more numerously shown than Dahlias, and the blooms were extraordinarily fine. For six vases of these flowers Mr. STEWART, Jun., Alloa, was placed first, with grand blooms; Mr. INNES, Hawick, was a close 2nd. The same competitors occupied identical positions in the class for six vases of these flowers containing 12 varieties. Phloxes, Chrysanthemums, Asters, and Pansies were other notable features in the cut flower classes.

Hardy flowers formed a grand display, Mr. RICHARDSON being 1st in the gardeners' class for six kinds, and Mr. BRYDON, Innerleithen, 1st for 12; both exhibitors showed grand specimens. In the nurserymen's classes Messrs. CAMPBELL & SON, Gourock, were easily 1st for Gladiolus, having 36 spikes of extra good quality; 2nd, Messrs MAW & SON, Prestwick. In the Dahlia classes in the nurserymen's section, Messrs. SMELLIE and Messrs. CAMPBELL were the chief prize-takers.

FLORAL DECORATIONS.

The important class for a dinner table decorated with flowers and foliage brought five competitors. Messrs. CAMPBELL & SON, High Blantyre, won the 1st prize with an arrangement in which pink and white flowers predominated; 2nd, Mr. MCINTOSH, 38, Polwarth Gardens, with a somewhat heavier arrangement, composed of Carnations and Dendrobiums; 3rd, Mrs. DUNCAN, Fogo, Duns, who used Henry Eckford and a cream-coloured variety of Sweet Peas, but the display was rather spoiled by the addition of Lily of the Valley. Mr. DAVIS, Stanley, Perth, showed the best decorated table, but by a mistake he was not permitted to compete.

Messrs. PERKINS & SON, Leamington, were 1st for a floral design with a representation of a gateway and gate, composed largely of Tuberoses and Orchids. They were also 1st for a hand bouquet of white flowers, for a coloured shower bouquet, and for a bouquet of Dahlias.

VEGETABLES.

The vegetable classes were 24 in number, for which there were over 300 entries, giving an average of 14 competitors in each class. The class for a display of 18 dishes of vegetables in not fewer than 12 varieties, and not more than two dishes of any kind, saw some noted growers competing with magnificent produce. The 1st prize was won by Mr. Jas. Gibson (gr. to the Duke of PORTLAND, Welbeck Abbey); the 2nd prize going to Mr. Harper (gr. to J. R. S. RICHARDSON, Esq., Perth); and the 3rd to Mr. R. Stuart (gr. to the Earl of LAUDERDALE, Thirlstane Castle).

The classes for Potatos were well filled, and the judges must have had considerable difficulty in deciding the best in each class, so excellent were the displays generally. Coloured Potatos apparently find but little favour in Scotland, as there were only a few dishes of these shown.

Tomatos of exceptional quality were seen, and they were in most cases of the usual smooth, globular type. About two dozen competitors contested in the classes for Tomatos.

Splendid Onions were shown. Mr. Gibson (gr. to the Duke of PORTLAND) easily secured the premier position with 12 bulbs of Ailsa Craig; 2nd, Mr. J. Laing (gr. to Sir J. C. RATTRAY, Blairgowrie); and 3rd, Mr. D. Murray (gr. to the Marquis of AILSA).

Fifteen competitors entered in the class for four heads of Cauliflowers. The best were shown by Mr. W. Bell (gr. to the Earl of HOME, Bothwell Castle); 2nd, Mr. J. K. Brown (gr. to J. OSWALD, Esq., Kirkaldy).

Cabbages, Curled Greens, Lettuce, Celery, Beetroot, Parsnips, Carrots, Turnips (white and yellow), Savoys, and Leeks formed the principal subjects of the other vegetable classes, and several growers competed in each section.

NURSERYMEN'S NON-COMPETITIVE EXHIBITS.

Mr. CUTHBERTSON, Rothesay, exhibited Pompon Dahlias, early Chrysanthemums, and Montbretias; Mr. YOUNG, Elgin, staged some 50 of the best varieties of Phloxes.

Messrs. J. COCKER & SONS, Aberdeen, had a nice assortment of cut border flowers, including some choice named Phloxes.

Messrs. J. GRIEVE & SON, Pilrig, staged Border Carnations and early-flowering Chrysanthemums.

Mr. HENRY ECKFORD, Wem, showed Sweet Peas, some of the finest ever staged in Edinburgh.

Mr. FORBES, Hawick, showed florists' flowers, Pentstemons being especially meritorious.

Mr. MCOMISH, Crieff, had a pretty lot of border flowers and Carnations.

Messrs. SUTTON & SONS, Reading, staged an extensive collection of Melons, Tomatos, Wax-pod and Scarlet Runner Beans, Ailsa Craig Onions, Celery, &c.

Mr. PAGE, Liberton, showed Tomatos and Chrysanthemums.

Messrs. STORIE & STORIE, Dundee, had a good lot of Apple trees in pots; also Streptocarpus, Begonias, and Celosias.

Messrs. H. LOW & Co., Enfield, London, staged Carnations in variety and cut blooms of Orchids.

Messrs. R. WALLACE & Co., Colchester, showed Montbretias Prometheus and other varieties.

Messrs. DOBBIE & Co., Rothesay, had an interesting collection of Turnips, and on another table a collection of cut flowers, including Roses, Sweet Peas, Chrysanthemums, Dahlias, Pansies, &c.

Mr. L. R. RUSSELL, Richmond, contributed a large collection of hardy Heaths.

Messrs. CUNNINGHAM, FRASER, & Co., Comely Bank, Edinburgh, showed seasonable hardy flowers, among which Tamarix odessana, Lysimachia sanguisorba, Tritoma "Seraph," T. Lemon Queen, T. rufa, and others were noticed.

Messrs. J. DICKSON & SONS, Hanover Street, showed shrubs in great variety.

THE SCOTTISH MUSHROOM CO. (1906), LTD., displayed Mushrooms.

Messrs. BEN REID & Co., Aberdeen, had Lilums, Veronica subsessilis, and Eulalias.

Messrs. R. B. LAIRD & SONS, besides a collection of Conifers, had a group of stove and greenhouse plants.

Messrs. J. METHVEN & SON, Leith Walk, arranged on the floor of the market, Lilies in variety, with Codiæums (Crotons), Dracænas, Caladiums, and other decorative plants.

Mr. FORTUNE, Queensferry Street, had a table of cut flowers arranged to show the value of the Beatall Flower Holders.

Messrs. THOMSON & SONS, Clovenfords, exhibited Grapes of fine quality.

Messrs. CAMPBELL & SON, High Blantyre, staged a bright group of Dahlias.

Dr. JOHN WILSON, St. Andrew's, exhibited a case of pods of hybrid Peas and their parents, to demonstrate the effect that crossing has upon the form and colour of the seeds. Nine varieties were shown, including wrinkled, green, round, and yellow garden Peas, and the field, crown and sugar Peas. All conformed to the principles set forth by the Mendelian theory. The series having the Sugar Pea as a parent were exceptionally interesting.

BRITISH GARDENERS' ASSOCIATION.—A fairly large meeting was held in the Bible Society's Rooms, St. Andrew's Square, Edinburgh, on September 12, when Mr. J. Weathers, Hon Sec., delivered an address on the aims and objects of the association. Mr. McHattie occupied the chair. A few nurserymen were in the audience, but only one took part in the discussion that followed. The general opinion of the meeting was that, if the society is conducted on proper lines, nothing but good would result from joining the association. It was stated that the executive council would be pleased to have a Scottish branch with headquarters in Edinburgh, or, better still, to have a branch in each Scottish county to co-operate with headquarters.

KUMAON.—This is a province of the Western Himalaya west of Nepal. Little was known of its flora till Lieut. (now Sir RICHARD) STRACHEY about 60 years ago commenced the survey of the region, in which he was afterwards associated with Mr J. E WINTERBOTTOM. The region traversed passes from S.W. to N.E., commencing in Rohilkund at an elevation of 1,000 feet above the sea-level, through the snowy ranges, and terminating in the Tibetan plateau at an altitude of 14,000 to 15,000 feet on the upper course of the River Sutlej. The numerous specimens collected were beautifully preserved and carefully ticketed, and they were distributed among the herbaria at Kew and other botanical centres. A provisional catalogue was prepared in 1882, and this has now been revised and extended by the very competent aid of Mr DUTHIE, who himself made extensive tours in British Garwhal, N. Kumaon and W. Nepal. In the present list Mr. DUTHIE enumerates 3,013 species distributed amongst 1,084 genera. Twenty-three species of Primula are enumerated and 10 of Androsace, whilst among Conifers, Cupressus, torulosa, three species of Juniper, one Yew, three Pines, one Cedar, one Picea, one Tsuga and two Abies are included. There are 161 Orchids, including 15 species of Dendrobium, six of Coelogyne, seven of Calanthe, eight of Habenaria, &c. Ferns are numerously represented, as are also Hepaticæ. Grasses, Composites and Leguminosæ supply the largest number of species. The species are enumerated in their respective natural orders, and tabular details are afforded, supplying information as to habit of growth, colour of flowers, time of flowering, locality, elevation above sea-level and geographical distribution. We have said enough to indicate the value of this carefully compiled catalogue as a work of reference, for which purpose the excellent index offers additional facilities. The work is published by LOVELL, REEVE & Co.

ENQUIRIES AND REPLIES.

CORNISH ELM.—Can any reader inform *J. M.* if this variety known as Ulmus campestris Cornubiensis originated in Cornwall, and by whom it was distributed, and in what year?

ANSWERS TO CORRESPONDENTS.

Ash. R. R. and S. We have further examined the specimen alluded to in this column last week, and find that there is no fungus present on the leaves; the brown discoloration is the result of injury caused by the scale on the

trunk. A tree in the Royal Gardens, Kew, has just the same appearance.

ASTERS FAILING: *H. B.* Without seeing a specimen, it is impossible to correctly determine the cause of your plants dying, but we suspect it is due to the Aster disease, the result of a fungus Erysiphe cichoracearum See our issue for June 2, 1900, p. 355

BOOK. *H. B* We know of no work on the subject other than *Vegetable Teratology*, by Dr. M. T. Masters, which is now out of print. You may, perhaps, be able to obtain a copy from a second-hand book shop.

BRACKEN (Pteris aquilina) *A G* If the growths are continually pulled out as soon as they can be observed above the ground, the rhizomes will in course of time die because the essential functions of the plants will be thereby prevented But bracken is capable of causing you very much trouble before it is exterminated by such means. The best method to adopt would be to trench the ground and get out all the rhizomes and roots, after which the grass seeds would have a much better opportunity to produce a good sward It would probably be also the cheaper means in the end. The applying of chalk alone would not effect your purpose.

CANADIAN GARDENING PAPER: *D R. The Canadian Horticulturist*, 507 508, Manning Chambers, Toronto, Canada.

CELERY DISEASED: *J L.* Your plants are attacked by a fungus, Cercospora apii. See answer to *H S*, in our last issue

DELBATING SOCIETY: *H. R. M.* Apply to the secretary of the Ilford Horticultural Society, Mr D J Hill, 31, Selborne Road, Ilford The horticultural instructor for the county of Middlesex is Mr J Weathers, Talbot Villa, Isleworth

EUCHARIS PLANT: *W. Cookson.* We have illustrated many very fine specimen plants of Eucharis grandiflora in these pages, at various times, but of most other plants showing skilful cultivation we shall be pleased to receive photographs for inspection from any of our readers.

EVERGREENS FOR BORDERS IN SUNDERLAND: *Doubtful.* Have the border thoroughly broken up and well manured before planting is attempted, as the roots of the old Sycamore trees will have robbed the soil of plant food Arrange your specimens in groups of say five to twelve, or even more, plants, because the effect of a colony of one species is much more pronounced than that produced by the mixed system of planting. The undermentioned plants are likely to prove satisfactory Two of the best flowering shrubs for your purpose are Berberis Darwinii and B. stenophylla, a third Barberry, B aquifolium, might be included on account of its perfect hardihood and brownish-crimson foliage in winter. Philyrea decora (P Vilmoriniana) is an easily grown handsome species with tiny white, hawthorn-scented flowers crowded round the previous year's wood in spring The golden-leaved form of the common broad leaved Privet will give colour all the year through, and is a good shrub for town gardens Cratægus pyracantha, the evergreen fire thorn, and Olearia Haastii, the New Zealand Daisy bush, are both good plants for your purpose. The Hedsworth and other strong growing-varieties of the common Box—Buxus sempervirens would flourish, and also the green and variegated forms of Elæagnus pungens. The Skimmias are hardy, dwarf in habit, and pleasing in foliage flower and berry. Aucuba japonica is an accommodating shrub, but is especially effective on sunny borders. Cytisus albus and C scoparius (white and yellow Brooms respectively), as well as the varieties præcox and Andreanus, also Cytisus battandieri, are very hardy and floriferous. Yucca recurva is a handsome foliage plant for the front part of the border, and at flowering time is particularly ornamental. Hollies should be planted freely, especially such varieties of the type as Hodginsii, camelliæfolia, platyphylla Golden Queen, aurea marginata bromeliæfolia, argentea marginata "Silver Queen," and argentea pendula picta (albo picta) If your soil is free from lime many hybrid Rhododendrons, such as Cynthia, H. W. Sargeant, Ascot Brilliant, Gomer Waterer, Viscountess Powerscourt, Baroness Rothschild, and Countess of Tankerville should be included Wherever Rhododendrons succeed Pieris (Andromeda) floribunda should be grown. Ilex europæa fl. pl. (double-flowered gorse), Quercus ilex and Osmanthus ilicifolius variegatus are hardy and ornamental. If you wish to include a few Conifers those here mentioned are particularly hardy: Cupressus nootkatensis, C. Lawsoniana, C.-L. lutea, C.-L. Silver Queen, C.-L. argentea, Retinospora obtusa aurea, R.-o. filifera, R.-o. gracilis, R. pisifera squarrosa, &c Of Yews, Taxus baccata elegantissima and T. b. aurea are the best. Thuya occidentalis lutea, T.-o. Ellwangeriana are effective.

GRAPES DISEASED: *L. G R. and R. S. O.* The berries are affected with the grape spot disease, the work of a fungus, Gloeosporium ampelophagum The lateral sent by *R S. O* is also affected by the disease. The diseased berries must be all cut out and burned Dredging with flowers of sulphur should be practised on the shoots and leaves at intervals of ten days. A small quantity of quicklime should be mixed with the sulphur on the second application, and the quantity should be increased each time until the proportion of lime and sulphur is about equal. It has been found of service to thoroughly wet the branches with a solution of sulphate of iron when the vine is resting. The use of rich stable manure is stated to render the vines susceptible to this disease. All fallen leaves and prunings should be collected and burned

GRUBS IN SOIL: *F F* The grubs can be destroyed by baking the soil In the case of your pot plants, make a hole in the soil near the side of the pots and pour in bisulphide of carbon at the rate of about two teaspoonfuls to a 6-inch pot. Close the holes after the application has been made and keep the plants in the shade for a week afterwards Caution: bisulphide of carbon is highly inflammable and poisonous

HEAVY TOMATO FRUIT: *G. G* Your fruit weighing 1 lb. 6 ozs. is not a record weight for a Tomato. In the *Gardeners' Chronicle* for April 26, 1902, p. 279, an illustration was given of a fruit which weighed 1 lb 10 ozs That specimen was grown by Mr. Burgess at Knowle.

JUDGING EXHIBITS AT FLOWER SHOWS: *J W* The system you recommend is already practised at Shrewsbury and some other large exhibitions, where the points awarded each dish in the large fruit classes are tabled and exhibited to the public Whether this system could be usefully extended to the smaller classes at such shows, and to Rose exhibitions is a question of expediency and convenience. It may, however, be remarked that in cases where the list of points awarded is not published, the actual awarding of the prizes may possibly have been determined by point-judging When the judges approach a competitive class of whatever nature it may be, they have to consider whether the differences in the exhibits are markedly distinct or not, and if the competition is good, the only safe course for them to adopt is to agree upon a standard and "point" the different constituents of the best exhibits But in other cases where there is considerable disparity between the produce shown and the order of the prize exhibits can therefore be easily determined upon examination, there is not the same need for point-judging, though in theory this may always be held to be desirable. We quite agree with your opinion that the quality of size is frequently over-appraised at horticultural shows, and that the practice of showing a few flowers of new varieties of Rose obtained from maiden plants may be misleading to visitors who attend exhibitions for the purpose of taking notes of varieties that appear to them desirable for cultivation in their own garden. These are disadvantages connected with exhibitions that have long been recognised and freely discussed. Those responsible for the holding of such shows should regard it as a duty to minimise these and other disadvantages as much as possible. Whether they could be entirely prevented is doubtful, and in any case we think the good arising from properly conducted horticultural shows is sufficient to outweigh such evils. It is necessary, however, for amateurs to learn that whilst it is exceedingly useful to make themselves familiar with the best exhibitions, and to take note of varieties that excite their admiration, it is essential that, before they decide to cultivate such varieties in their own gardens, information should be sought as to their habit of growth, strength of constitution, and general fitness for cultivation in the conditions under which they would be expected to grow.

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

Miss R. Apple Harvey's Wiltshire Defiance (a grand fruit).—*W. G. S.* 1, Minchull Crab; 2, Worcester Pearmain; 3, not recognised; 4, King of the Pippins; 5, Greave's Pippin; 6, Bedfordshire Foundling.—*C. A. B.* Apple Summer Strawberry. The Nectarine was crushed. Peaches and Nectarines should be fully grown, but not perfectly ripe when packed, and they should be sent in a separate package.—*F. A. T.* 1, Malster; 2, Cellini Pippin; 3, Lord Suffield; 4, Dumelow's Seedling (Wellington); 5, Gravenstein; 6, Emperor Alexander.—*A. J F., Leamington.* Apple King of the Pippins.—*H. G.* 1 and 4, Dutch Codlin; 2, Grenadier; 3, Alfriston.—*Sleath* 1 and 3, Worcester Pearmain; 2, Scarlet Pearmain.

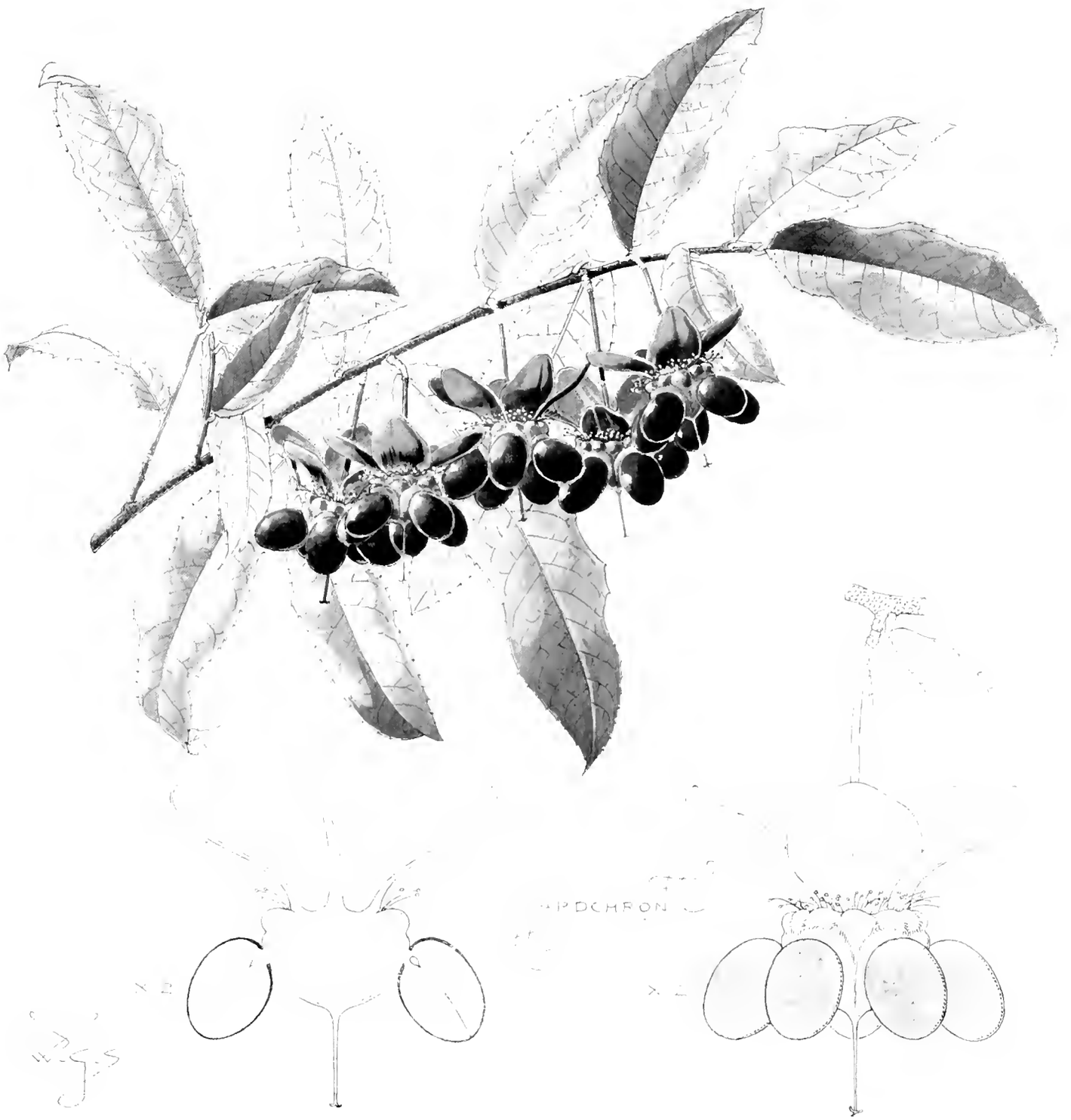
NAMES OF PLANTS: *Winterhome.* 1, Camellia japonica; 2, send when in flower; 3, Phyllocactus species, but no flowers are sent; 4, Agave americana variegata; 5, send later when in flower, 6, Cratægus sp.; 7, Cotoneaster frigida; 8, the specimen is insufficient; 9, Dactylis glomerata variegated variety; 10, Isolepis gracilis syn. Scirpus setaceus; 11, Oplismenus Burmannii (Panicum variegatum).—*C. L. B.* Tecoma radicans, a well-known North American plant, Nat. Ord. Bignoniaceæ.—*Miss C.* Parnassia palustris, but the leaf sent is not that of this species.—*T. G., Buntingford.* Polygonum baldschuanicum.—*W. E. L.* 1, Carex sp.; 2, Dactylis glomerata, variegated variety; 3, Rivinia humilis.—*I. S. E.* It is impossible to name the Arum from the berries alone; an inflorescence and leaf are required.—*Rayner.* 1, Helianthus multiflorus; 2, Helianthus rigidus. It is difficult to be certain when naming such scraps as these specimens.—*G. W. L.* You send more than the regular number. 1, Melia Azedarach, 2, Moorea bicolor; 3, Banksia sp.; 4, not recognised; 5, Eriobotrya japonica; 6, Eugenia sp., flowers required to identify; 8, Persea gratissima; 9, Ceanothus Gloire de Versailles, 10, Pyrus Aria, 11, Pyrus Aria var. —*C E F.* Erica flava.—*L. W.* Why not number your specimens? The trailing plant is Linaria Cymbalaria. The Heath with the decussate leaves is the common Ling, Calluna vulgaris; the other is Erica cinerea, the Scotch Heather.—*J. M.* 3, Trifolium arvense; 4, Apium graveolens; 5, Heracium umbellatum. Thanks for the contribution of two shillings to the Royal Gardeners' Orphan Fund. The names of Pears will be published next week.

NURSERY BUSINESS: *E. H.* The amount of your capital being so small, it will be better to cultivate some speciality, which will depend upon the experience you obtain in the meantime.

PEARS FAILING TO KEEP WELL: *A. F. H.* The Pears should not have been gathered in so green a condition as you mention. They should be harvested when they can be readily parted from the stalk, which can be ascertained by lifting them in the hand. With regard to your other question, we should not advise your commencing business if you have no experience, but providing you know something of the trade you could start in a small way with the capital you mention. It would be better to work in the nursery for a time as an assistant and save your money, than to risk losing it when you have no knowledge of marketing and selling.

COMMUNICATIONS RECEIVED.—A. Spriging (your letter has been forwarded—Galbraith, Bethune & Co. (many thanks, the news was published in these pages a fortnight ago)—C. Sprenger (many thanks)—F. M.—H. W.—P. W. (photographs with thanks)—J. Mc—J. W.—L. E. S.—T. M.—H. P.—T. W. C.—J. W. G.—W. H. C.—B. L.—I. L. R.—G. H. C.—W. and S.—J. G. W.—C. P. R.—C. R.—W. H.—J. T.—S. A.—W. F. G.—F. B.—W. P. J. D. G.—J. C.—J. A., Beira (photographs)—A. W. Sutton—E. M.

For Market and Weather Reports see page x.



OCHNA MULTIFLORA, A TROPICAL EVERGREEN SHRUB, SHOWING THE YELLOW CALYCES AND BLACK FRUITS ON A RED, FLESHY RECEPTACLE.

(Sketched by Mr. Worthington Smith from specimens exhibited by Mr. Turner, Slough.)

Temple Press Ltd., Printers, 7–15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle

No. 1,030.—SATURDAY, September 22, 1906.

CONTENTS.

ILLUSTRATIONS.

FRUIT-GROWERS, THE GOVERNMENT, AND THE RAILWAYS.

AN interesting correspondence has been going on lately in the *Times*. In the first place, Mr. C. Radcliffe Cooke, following the recommendations of the Departmental Committee to enquire into the present condition of the fruit industry, urged the formation of a special department of the Board of Agriculture with two sub-departments, one to act as a bureau of information on all subjects connected with the industry, the other to form and supervise a special experimental fruit-farm. The present President of the Board of Agriculture was waited on by a representative deputation to urge him to give effect to the recommendations of the committee. The results were not encouraging. The Government is pledged to economy and to reduce taxation, and does not see its way to carry out the recommendations of the committee. So far as these objects can be effected by co-operation among the persons concerned, it would no doubt be better to rely on private enterprise than to invoke Government aid. But there are other matters that only a central government armed with the necessary powers can accomplish—such, for instance, as the enforcement of measures to prevent the introduction of diseases, so far as that may be possible, or to stamp out the pests when they have been introduced. Individuals, or even associations of individuals, can only render imperfect aid in such matters, or it may be that their efforts might prove futile. The phylloxera spread far and wide in spite of the most strinent Government restrictions. Mr. Radcliffe Cooke instances the Pear midge, which, he says, though we think he must be mistaken, has only been known in this country for twenty years. At any rate he says, had the Board of Agriculture of that day possessed such a department as he advocates, the existence and habitat of this pest would have been known, and precautions would have been taken against its introduction or to secure its extermination. Now, in this matter, as in so very many similar instances, the pest was described and figured years ago in the *Gardeners' Chronicle* by foremost experts [see *Gardeners' Chronicle*, July 14, 1888, p. 45]. The difficulty is, or has been, to get people to read, and more especially to heed what they read. Thanks to the increased activity of the Department of Agriculture and to the County Council schools and lecturers, there are signs of improvement in these particulars, and the coming generation will be better fitted to deal with these matters than their predecessors. The United States Department of Agriculture and the numerous colleges and stations, to whose labours we have so often to allude, furnish an excellent example, which we might follow with great advantage in this country.

Another subject of great importance to fruit growers is raised by Mr. Cecil Hooper. He does not do more than allude to the rates charged by the railway companies, and in this perhaps he is wise, as the companies have to make a living as well as the fruit growers, and their shareholders have as much right for consideration as the growers. A fair compromise is all that can be expected between conflicting interests. Motor-cars and canals will sooner or later compete so keenly with the railways that the public, at least, will gain by the competition. Mr. Hooper's complaint is mainly directed against the late arrival of the fruit-trains, the possible loss of a market, and the certain deterioration of quality of the fruit by delays in delivery. Mr. Hooper cites instances where Strawberries which arrived at Covent Garden at ten in the morning sold at nine shillings the peck, whilst at 11.45 the price had fallen to 4s. 6d. and 5s. This is no doubt very grievous to the grower whose fruit arrived late, but it must be remembered also that if all the fruit were delivered early the price would also be low in proportion, and, again, there is, within twenty or thirty miles of London, and doubtless of other great centres of population, no reason why farmers and fruit growers should not co-operate and be their own carriers by motor-traction, and by steam boats where rivers and canals are available. Wholesome competition of this kind would doubtless induce the railway companies to reconsider their tariffs and increase their speed. Mr. Hooper concludes his letter with the following recommendations:—

"Parliament should deal with the railways in the matter of their carriage of perishable produce as to:—

(1) Reclassification, based on trouble given, amount of handling, and space taken rather than on the basis of liability to claim.

(2) Efficient care should be given to all goods, independent of rate.

(3) The railways should be held responsible to deliver in reasonable time; and (4) to deliver the proper quantity.

(5) Temporary "glut rates" should be allowed when there is a very abundant crop, in order to carry the fruit cheaply to greater distances and to market, to avoid fruit being left unpicked and wasted.

(6) The Board of Trade should put in force their existing powers in case of breaches of the law by the railway companies.

(7) In the case of agricultural produce, the Board of Agriculture should be arbitrator in disputes between the producer and the railway.

The English fruit grower asks for fair play and to be treated as well as the foreigner, and believes the railways by granting greater facilities and cheaper rates would not only benefit this valuable and important industry, but that the railways would be more prosperous, and increased dividends would be earned for the shareholders."

In a subsequent number, Mr. Pratt traverses some of Mr. Hooper's specific statements by reference to the records of the railway companies. Mr. Pratt further intimates that the delay in delivery is not entirely the fault of the railway companies:

"The evidence given before the two committees proved that, whatever the actual shortcomings of the railways, the fault for this late delivery is far from being entirely due to them. It was shown, in the first place, that fruit-growers generally send their consignments to the local station only at the last moment, so that difficulties occur in handling them, and the delay of trains in starting is unavoidable. Then, when the railway-vans take the consignments to the London markets, they may be kept waiting for several hours owing either to the congestion of traffic in the streets, or, alternatively, to the reluctance of the salesmen to accept delivery when the market is over-supplied and previous consignments have made poor prices. Concerning such delays Mr. Vincent W. Hill, general manager of the South-Eastern and Chatham Railway, said in his evidence before the Departmental Committee on the Fruit Industry: 'That renders it extremely difficult and very expensive to the companies, seeing that the vans cannot get back to take a second load, and it also causes delay at the railway by not clearing away the second lot of fruit that comes in.'"

PROPAGATION IN SEPTEMBER AND OCTOBER.

IN the present month, as in August, great use may be made of the mild hot-bed in the open air for the propagation of the under-mentioned plants, which are largely employed in the flower garden and greenhouse. Some of them winter sufficiently well in store pots of from 6 to 8 inches diameter, filled with sandy loam and leaf-soil, and surfaced with clean silver sand, or washed sea sand. If space will permit, however, better results are obtained by potting the rooted cuttings singly in large or small 60's, in which they may be kept till the spring or planting-out time, according as may seem desirable, or, should the plants be required to furnish cuttings for early spring propagation, a slight re-potting may become necessary at the end of the month of January. A mild hot-bed, i.e., one that will afford a bottom heat of 75°, is best made of freshly-fallen tree leaves, but failing these, those left over from the previous autumn will do if mixed with long stable litter in equal proportions. The bed must be made one foot wider and longer than the garden frames that

will be placed thereon, and the materials should be firmly trodden, and when the frame is in position other leaves should be added so as to bring the tops of the cuttings within 6 inches of the lights. Some gardeners plunge the cutting pots directly into the leaves; others place a 6-inch layer of finely-sifted coal ashes or half-decayed leaves over the last-named material, in which to plunge the pots.

In such beds can be rooted the following:—Cuphea platycentra, Verbenas in variety, Petunias, Ageratum in variety, Bouvardia (roots and cuttings of the top growths), Gazania, Gnaphalium, Heliotropes, Lantanas, Angelonia, Anthemis, Veronica, Coleus, Senecio, Solanums, Pelargoniums, and Chelone.

All of the varieties of Pelargoniums employed in flower beds in the summer are the better for being rooted in prepared beds of sandy soil in full sunshine, as early in September as it may be possible to obtain firm, well-matured shoots from the top and exposed parts of the plants. The varieties usually grown for greenhouse decoration, viz., the fine large-flowered Zonals and the Ivy-leafed, may be equally successfully rooted in these open-air beds as under glass, or in the mild hot-bed, and the plants are more robust, and the losses fewer.

In the warm bed, cuttings formed of two-year-old shoots of Ficus elastica, Dracæna terminalis, and underground tubers may be rooted; also Phœgelius capensis. Iresines and Alternantheras, both require more warmth than is afforded by the mild hot-bed, say, a bottom warmth of 80° and top heat of 70°. These early struck Alternantheras afford better and stronger shoots for the spring propagation than old store plants, and are, therefore, to be preferred. The same applies to Iresines, but, perhaps, to a lesser degree.

If plants of Sempervivum tabulæforme, Echeveria metallica, or others are in bloom in the open ground, some of them may be carefully taken up and be potted in sandy loam, and stood in a sunny house that is well ventilated daily; they will then set their flowers, and ripen their seeds, which is unlikely to occur out of doors in this country. When ripe, sow the seeds, after allowing them to become dry for a day or two, and nice plants will be secured for the following year.

Seeds of Lilium Thunbergianum, and L. tenuifolium often occur in the ripe state on the plants. The capsules should be gathered, and dried in the sun for a day or two, when the seeds may be sown in peat and leafmould, in which they will germinate in about four weeks. Seeds of L. auratum, L. giganteum, and others take a year, or even longer, to appear above ground. The wooden box is, in the case of Lilies, a better receptacle for the soil than pots or pans. A warmth of 55° is required to germinate the seed.

A shady border, prepared by digging and adding a liberal sprinkling of sharp sand, and having some well-rotted leafmould incorporated with the soil, may be made of use for the reception of cuttings of Centaurea candidissima, C. gymnocarpa, Pentstemons, Pansies, Violas, and Phloxes, both shrubby and prostrate species.

A sort of cold bed is employed on the Continent for the purpose of wintering cuttings that need protection, and in these may be put at this season Roses, Kerria, Honeysuckles, Hydrangeas, Dianthus, Lilac, Aubrietia, Laurel, shrubby Veronicas, &c. It is usual to surround these beds with sheep hurdles, matted thickly with straw, in order to keep out frost and cold winds, and to cover them at night time with mats, formed either of straw or bast. Such beds should be kept at about 40° to 45° Fahr.

Cuttings of many kinds of evergreen shrubs and others may be inserted in sandy soil laid upon beds of almost spent tan, old Melon beds, and the like, which retain a certain amount of heat that will favour the formation of roots. Euonymus japonicus, E. radicans, Aucuba, Weigelia, &c., may be propagated in this manner. The French call such lukewarm beds *couche sourde*, and use them extensively for striking cuttings of shrubs from soft shoots, and for the propagation of such plants as Bamboos, Yucca, Arundo, &c., from cross sections of the stems.

The following species of shrubs may now be layered:—Rhamnus, Viburnum [Laurestinus], Magnolia, Spiræa, Rhododendrons, and Aucubas. Rhododendrons raised from layers as stocks on which to graft the finer varieties may be lifted and potted in readiness for grafting under glass. Bud the female Aucuba with the male kind in these months, in order that when the female blossoms appear, they may become fertilised, and furnish an abundance of shining scarlet berries in the winter months.

Seeds.—Sow for late flowering seeds of Primula, Calceolaria herbacea, and Cinerarias of the various sections. *E. M.*

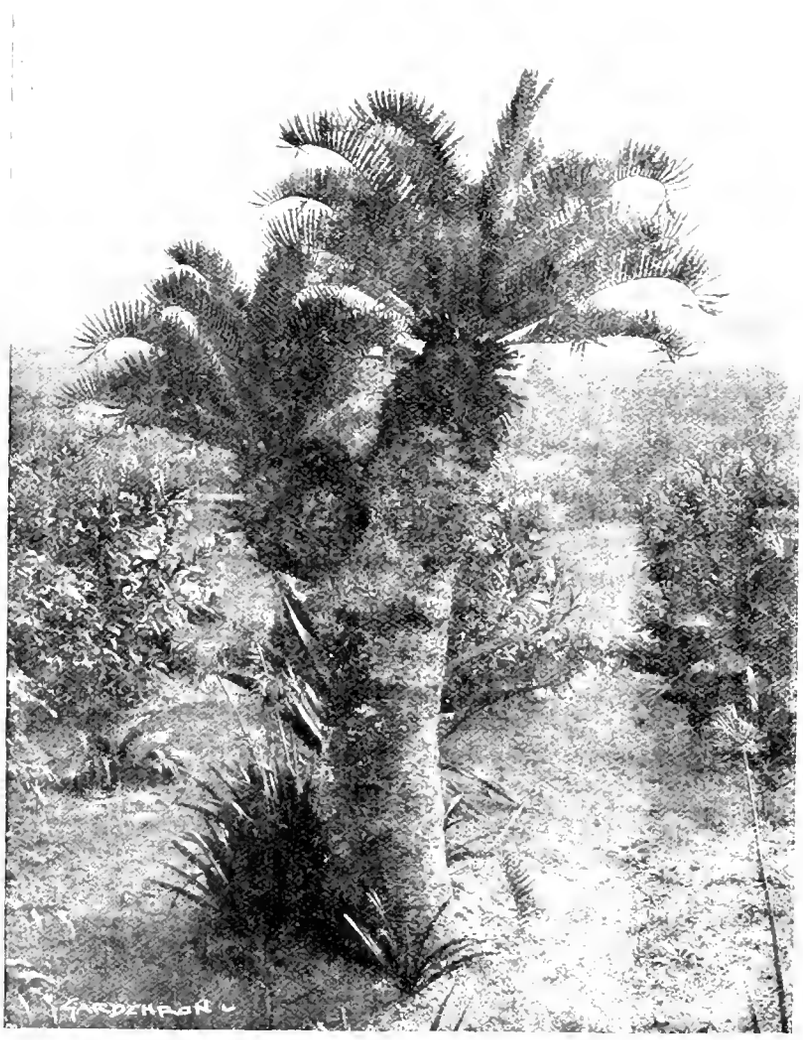


FIG. 84.—ENCEPHALARTOS ALTENSTEINII GROWING IN CAPE COLONY.

ENCEPHALARTOS ALTENSTEINII.

I SEND you a photograph (reproduced at fig. 84) of a very fine specimen of Encephalartos Altensteinii. The plant, with many more of the same and other species of the genus, is growing in the garden of Mr. Smartt, in the Uitenhage division of Cape Colony, and is estimated to be considerably over 100 years old. It has survived a good many bush-fires, and the aged trunk is charred like a cinder from the base to a point at about 3 feet from the ground, and is a great curiosity owing to the offshoot which is invariably termed the Piccaninny—growing, as it does, similar to the way a Kaffir mother carries her child. Mr. Smartt is a great admirer of these uncommon plants, and is never tired of collecting aged, quaint, and new specimens, or relating his experiences concerning their characteristics and peculiarities. Situated some 25 miles from Port Elizabeth, it is a locality of beautiful scenery and botanical interest. A fine river runs through the farm, and the lovely Van Staadens Gorge is quite close. Miss North visited the farm and district, and her notes are, I believe, preserved in the library at the Royal Gardens, Kew. *Harry Rabpohn.*

THE PRIMULAS OF CHINA.

(Continued from page 192.)

In height, Chinese Primulas range from half an inch in P. Pumilio to 3 feet or more in P. pulverulenta. The first-named has bright rose-pink flowers, which expand immediately the snow melts, forming lovely carpets in the moist, grassy belts. So minute is the plant that it is nearly impossible to find it when in fruit or out of flower, and, even when in flower, it is tedious work gathering specimens.

P. pulverulenta, on the other hand, is seen from afar, and once seen, never forgotten. This new species has already many friends in this country, and is, I venture to predict, destined to become in the near future the most highly-prized of all hardy Primulas. It is in the way of, but distinct from and superior to, P. japonica [see fig. 85, p. 20] no higher praise can be given. The cultural requirements of P. pul-

FIG. 85. THE PRIMULAS OF CHINA: P. JAPONICA, HARDY PERENNIAL; COLOUR OF FLOWERS, MAGENTA.

(For text see page 206.)

verulenta are those of P. japonica, and all who succeed with the latter will have no difficulty with the new plant. In vigour, size, and colour of flowers, P. pulverulenta equals the best forms of the Japanese Primrose, whilst its tall scapes, often with nine separate whorls of flowers, are densely clothed with white farina. It is in the possession of this latter character, combined with all the good qualities of P. japonica, that P. pulverulenta may be placed at the head of the family of Primroses hardy in this country.

There is one unfortunate fact about Primulas, and one that is of much horticultural significance, namely, that many species are little better than biennials, and only succeed under cultivation when treated as such. This is particularly true of many of the strong-growing bog-loving species, such, for example, as P. sikkimensis, P. Wilsoni, and P. vittata [see fig. 87, p. 209]. A great many of the Chino-Himalayan species really belong to this category, but such as P. Veitchii and P. pulverulenta are absolutely perennial.

Comparisons are ever invidious, and if any are entered into here it is not with any intention or desire to disparage the merits of Primulas found in countries other than China. To do so would be absurd. In P. sinensis China supplies what is probably the most popular member of the whole Primrose family. For about sixty years this was the only species of Primula known from the Flowery Land, in cultivation in this country, and the habitat of even this species was unknown until about three decades ago. Twenty-five years ago the late Chas. Maries, when collecting for Messrs. Veitch, introduced from Ichang the now well-known P. obconica. About 1889 two other species, P. Forbesii and P. Poissoni, were sent to France by Père Delavay, and shortly afterwards these got into cultivation in this country.

To these four species cultivated in this country, the writer, under the auspices of Messrs. Veitch, has had the good fortune to add 19 more species. Several of these are quite new, and all have flowered in this country. Many of the new-comers have been figured and described in the columns of the *Gardeners' Chronicle*, and Messrs. Veitch's exhibit of new Primulas at the Temple Show will be fresh in the minds of all who saw it.

Various systems of classification have been devised and adopted by botanists who have dealt with the Primula family. All such systems are more or less useful, but for the purpose of this article we need not trouble ourselves about specific affinity, and a classification based on habitat will probably be of most interest to plant lovers. The Chinese Primulas easily lend themselves to such grouping, and we may divide them into *Limestone*, *Woodland*, and *Grassland* species. These groups are very unequal, 85 per cent of the species falling into the last-named group.

I. *Limestone.*—The most noteworthy member of this group, and the only one in cultivation, is P. sinensis. So much has been written about this favourite that there is really nothing left to tell. I may perhaps remind readers that in a wild state this plant is a true perennial, and occurs on bare ledges and niches of cliffs fully exposed to the sun, where it gets but very, very little moisture. In a state of nature the flowers are of a uniform mauve pink, and I never saw any variation in colour not even an Albino! This is, to say the least, remarkable, when we consider the wide range of colour we find in this plant under cultivation. In late January and February the cliffs around Ichang, where this plant has its home, are a delightful picture. After flowering, the flower-stalk becomes negatively heliotropic (turns away from the light), an interesting biological character which the plant appears to have lost under long cultivation.

P. cuneifolia, P. pulchella and P. bracteata are three of Delavay's "finds" belonging to this category of Limestone species. P. bracteata is a truly extraordinary species with a woody stem as thick as an ordinary lead pencil, and 8 inches to 1 foot long. The flowers are pink, of small size.

II. *Woodland.*—This, like the preceding, is a small group, comprising fewer than a dozen species. P. ovalifolia and P. sonchifolia are perhaps the most striking. From Central to Western China (about 1,000 miles), between 3,000 and 8,000 feet, the first-named is very abundant, and is to China what P. vulgaris is to this country. P. sonchifolia connects up with P. ovalifolia at 8,000 feet, and extends to 11,000 feet. Both species have large violet-purple flowers. Owing to some unknown reason (possibly excessive rainfall) both these species apparently fail to produce good seeds. The capsules swell up well, but burst before the seeds are mature. The green immature seeds may be seen in the ruptured capsule, and though several attempts were made with these "seeds," all failed to grow.

The introduction of P. ovalifolia was accomplished by bringing to this country living plants from the neighbourhood of Ichang. P. ovalifolia flowered at Coombe Wood last year, and was figured in the *Gardeners' Chronicle*, 1905, vol. xxxviii., p. 62 Suppl. Unfortunately, this lovely plant so far refuses to thrive under cultivation. P. calliantha is a denizen of the Pine-woods of Western Yunnan, where it was discovered by Delavay. It is a very handsome species, in many respects resembling P. nivalis. P. deflexa, P. Viali, P. Giraldi, P. nutans, P. bellidifolia, and P. cernua are all found growing in thin woods and shrubberies at considerable elevations. These species form a curious group, having the flowers arranged in a dense cone-shaped head; the pedicels are very short and the corollas deflexed. The flowers are of varying shades of violet-purple or blue, and are very sweet-scented. The scapes are often 1½ feet high. P. deflexa, P. nutans, P. bellidifolia, and P. ovalifolia are the only members of the woodland group as yet in cultivation.

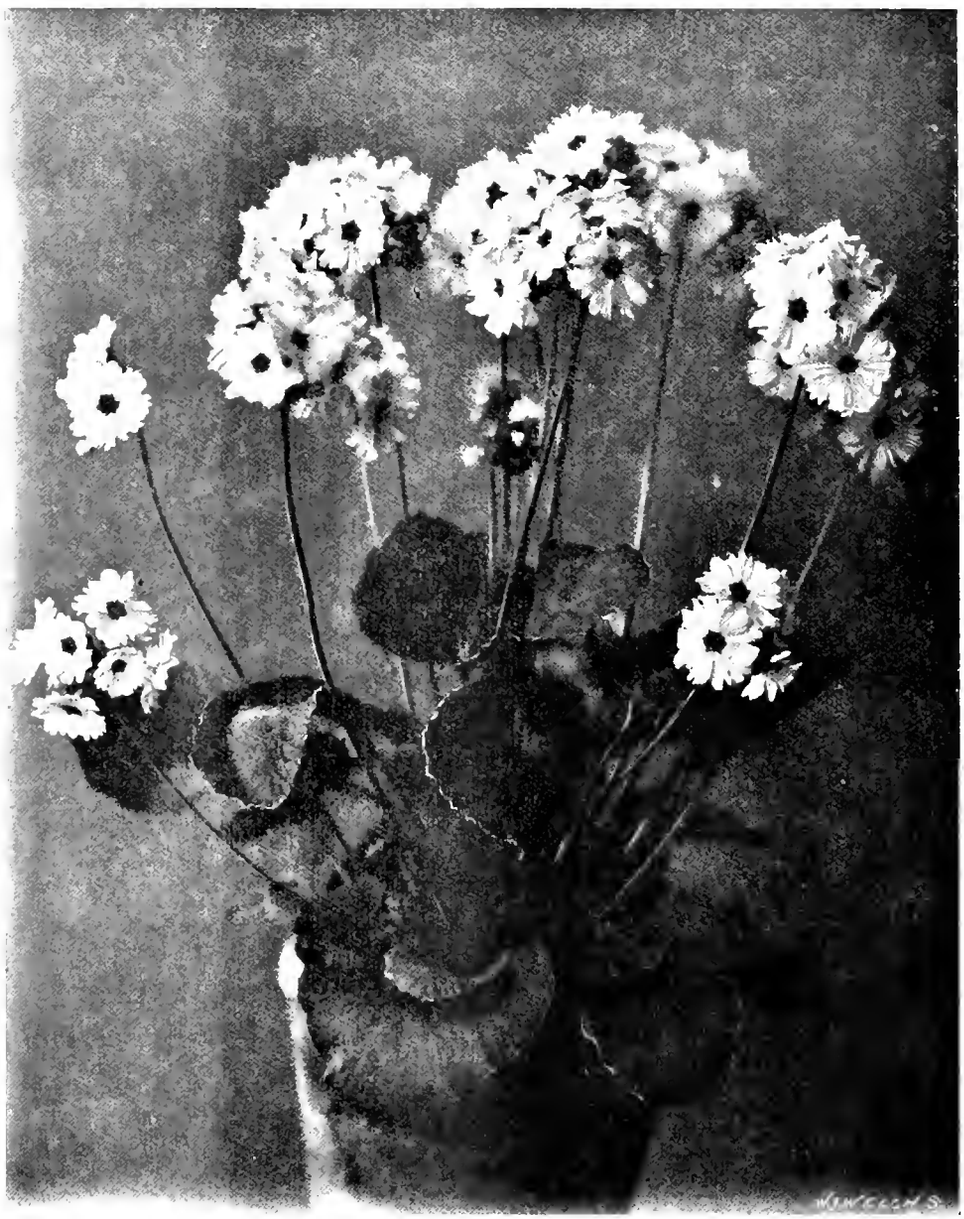


FIG. 86.—THE PRIMULAS OF CHINA: AN IMPROVED FORM OF P. OBCONICA.

III. *Grassland.*—The term, "Grassland," is somewhat vague, and is used for the simple reason that a more comprehensive one is not forthcoming. Under this heading are grouped all the species of Chinese Primulas which inhabit open places, whether it be grassland, marshland, woodland glades, or bare rocks in the higher Alpine regions. As members of this group extend practically from the sea-level to the limits of vegetation, it will conduce to clearness if some sort of sub-division be made. Fortunately, the species lend themselves to this, and we may conveniently group all found below 8,500 as Temperate species. Those found above 8,500 we may designate Alpine species.

III.a. *Temperate.*—This, though not so large as the Alpine group, includes a great many species, some of which rank among the finest of the genus. Two species (P. obconica and P. Forbesii) are well known in gardens in this country and the Continent. P. obconica [see fig. 86, p. 208] is very abundant in moist, grassy places from Ichang westward, and ranges up to 4,000 feet. It is very variable in size and texture of leaves, and the flowers also vary in size and colour. Under cultivation, the plant has marvellously improved, so much so, in fact, that the best of the wild forms are mere "weeds" in comparison. *E. H. Wilson.*

(To be concluded.)

NURSERY NOTES.

ANNUALS AT READING.

A RECENT visit to the interesting trial grounds of Messrs. Sutton and Sons, Reading, afforded me an opportunity of inspecting a collection of annuals, most of which were in their full beauty. The display of these showy and easily-grown plants was indeed remarkable, whether viewed from its great extent or its exhaustive character. In all, some sixty acres are at Reading devoted to experimental trials of plants. Great numbers of stocks and diverse types of the plant that is undergoing trial are brought together side by side for testing. The trial is, therefore, essentially comparative, and neither effort nor expense is spared in the endeavour to render it as complete as is possible. The date of sowing, the appearing above ground of the seedlings, the coming into blossom, and numerous other items are all recorded. Taking Stocks for an example, the rows must have measured considerably over half-a-mile, and at the time of my visit these were a mass of flowers. A given number of plants of each variety are grown in convenient quarters of land some 24 feet wide. It was instructive to see the large area covered by individual plants, for in numberless instances they measured 18 or 20 inches across, and this, too, in a stony soil of very little depth. I was especially impressed with the wonderful mass of blossoms, the sturdy, vigorous character of the plants, the quality of the strains, and the very high percentage of double flowers. The dry summer has suited the Stock. The bedding (ten weeks) and the intermediate sections were excellent. Mauve Beauty, Superb Bedding, and Perfection are ideal types of the first-named section, and there are many distinct shades of colour. Queen of Mauves and All the Year Round, the latter with flowers of snow-white purity, are excellent among the winter flowering kinds. Mignonette is also tested on a large scale in these nurseries, and it is difficult to see where further improvement can be made in the type known as the "Giant" strains. The variety Improved White well merits its name.

Very large and exhaustive trials of Verbenas and Petunias were noticed, and the value of both these species as dry-weather plants was as apparent as in the case of Stocks. The former were sown in batches of certain colours, and the manner in which they came true showed them as reliable as named varieties for bedding purposes, while they have greater vigour than named sorts, and fine spreading tufts of flowers. A noticeable feature was the prostrate habit of growth in certain strains, which thus requires no pegging. Other important subjects seen were Sweet Williams, Antirrhinums, both dwarf and tall; Marguerites, Carnations, &c. Border Carnations also receive considerable attention, but these were past their best condition at the time of my visit. Deserving more than a passing note is the valuable Nigella "Miss Jekyll," the plant so well known by its popular name of Love-in-a-Mist. As a blue-flowered annual of great merit this fine plant is deserving extended cultivation. This particular form quite surpasses the Cornflower in richness and intensity of colouring, and from every consideration, whether as a garden subject or for furnishing cut flowers, I know of few plants to equal it. The rich blue flower heads are freely produced, and are about 2 inches in diameter. Godetias were an exceedingly gay gathering, and one was impressed by the purity of the Stocks, and the wonderful profusion of flowers. Surely no

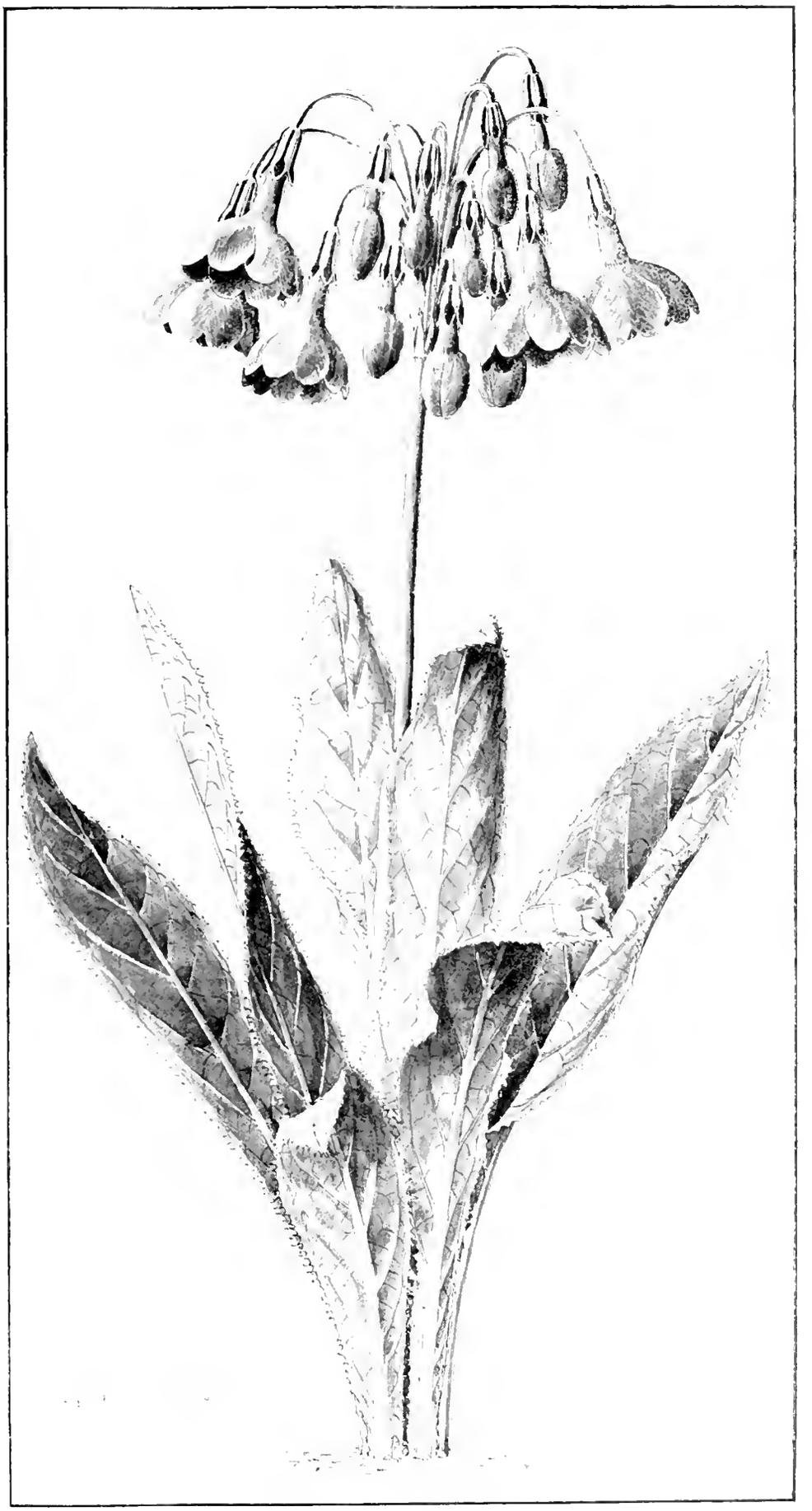


FIG. 87.—THE PRIMULAS OF CHINA: P. VITTATA; COLOUR OF FLOWERS, PURPLE.

annual can surpass these in richness or in diversity of colouring. Crimson King is a flower of intense colour, and equally good is Scarlet Queen. Double Rose is also very beautiful, and invaluable for cutting. Among the annual Larkspurs (Delphinium) the Stock-flowered rosy-scarlet variety is unique in the richness of its colour, and in its fine branching habit. The colour is rare, and the variety possesses an especial value in consequence. A plant growing 3 feet high was one of the most desirable plants that came under my notice.

Of distinctive habit, and of much worth for beds of large size, are the Lavateras, some of which, including rosea splendens and alba splendens, mark a considerable advance. The colour of the first-named is a brilliant rose pink.

I have named but a few of the subjects grown in these famed trial grounds. Sweet Peas and Poppies were over, while the Asters and many other annuals were not yet in flower. *E. H. J.*

NOTICES OF BOOKS.

SOILS. By E. W. Hilgard, Ph.D., LL.D. The Macmillan Company, London. Price, 17s. net.

WE gladly welcome this contribution of Dr. E. W. Hilgard, LL.D., Professor of Agriculture in the University of California.

If there is an authority who is especially capable of speaking upon this most complex subject, it is the author, who has devoted a considerable portion of his time to this branch of agricultural science.

We gather from the preface that from boyhood up it has fallen to the author's lot to be almost continuously in more or less direct contact with the conditions and requirements of newly-settled regions, as well as with those hardly yet invaded, even by the pioneer farmers, where the question of cultural adaptation was yet undetermined or wholly in the dark. Being during his active life constantly called upon in his official capacity to give information and advice to pioneer farmers or intended settlers in regard to the merits and adaptations of virgin soils, the author's attention was naturally and forcibly directed towards soil investigation as a possible means of determining beforehand the general prospects and special features of agriculture in regions where actual experience was either non-existent or very inadequate.

Popular forecasts of soil values. In newly-settled countries, and still more in those yet to be settled, the question of the immediate productive capacity and the future durability of the virgin soil are the burning ones, since they determine the future of thousands of human beings for weal or woe.

This need has long ago led to approximate estimates made on the part of the settlers by the observation of native growth, especially the tree growth, and where this consists of familiar species, normally developed, such estimates on the part of experienced men, based on previous cultural experience, are generally very accurate, so much so that in many of the newer States they have been adopted in determining not only the market value, but also the tax rate upon such lands, their productive and probable durability, and since the native vegetation normally represents the results of secular or even millennial adaptation of plants to climatic and soil conditions, this use of the native flora seems eminently rational.

It was from this standpoint that the author, suggested by his early experience in the Middle West, and subsequently more impressively presented to him in the prosecution of the geological and agricultural survey of Mississippi, undertook the detailed study of the physical characters and chemical composition of soils. It seemed to the author incredible that the well-defined and practically so important distinctions, based on natural vegetation everywhere recognised and continually acted upon by farmers and settlers, should not be traceable to definite physical and climatic differences in the respective lands, by competent, comprehensively-trained, scientific observers, whose field should be broad enough to embrace concurrently the several parts of view—geological, physical, chemical, and botanical—that must be conjointly considered in forming one's judgment on land.

The work before us consists of 589 pages, with a comprehensive and well-arranged index. It comprises the formation of soils, their properties, composition, and relations to climate and plant-growth in the humid and arid regions.

Each section is most carefully and comprehensively dealt with by the author, and comprises both a "text" and "reference" book of no mean value. It has been the writer's aim to reach not only students in the agricultural colleges generally, but the rapidly-increasing class of farmers of both regions who are willing, and even anxious, to avail themselves of the results and principles of scientific investigation without "shying off" from the new or unfamiliar words necessary to embody new ideas.

It is not easy to imagine a subject of higher direct importance to the physical welfare of mankind, whose very existence depends on the yearly returns drawn by cultural labours from the soil.

We can with every confidence recommend the work to those who are intending to become settlers in the New World, and anticipate laying down land to corn or to fruit growing. A previous study of such a volume as the one before us may possibly prevent the waste of years of labour and the useless expenditure of thousands of pounds sterling.

The Week's Work.

THE HARDY FRUIT GARDEN.

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

Planting Fruit Trees.—The preparation of the ground for tree planting should be well done. If a piece of new ground has been selected, it may need trenching and probably draining, and if it is a small area only, say for planting 50 or 100 trees, it should certainly be trenched. If young trees are to be planted in the place of aged and worn out specimens, or to replace worthless varieties, the old soil should, as much as is possible, be cleared away. It is a mistake to plant again in the old soil, but if this cannot all be replaced, use at least one third of new loam. Road trimmings can usually be procured in quantity, and this is a very suitable material to mix with the old loam, and it is especially valuable when mixed with a portion of soil from an old pasture. After the old trees are rooted out, trench the ground to a depth of 2 feet 6 inches, after which fill in the holes where the trees are to be planted with the new material as described. In preparing the land for Peach and Nectarine planting some mortar rubble should be incorporated with it. I do not advocate the use of manure at the time of planting fruit trees excepting where the ground is very poor, and then it must be in a well-rotted condition. The fresh soil will supply all the needs of the trees for the first year or two, and afterwards they can be given a top-dressing of manure, or be fed in some other manner. Apple and Pear trees grafted on early fruiting stocks are the best for fruit gardens of limited area. Fruit trees should be ordered from the nurseryman early in the season, as they send out their best trees first.

Strawberry Planting should now be finished and the autumn sunshine will enable them to strengthen their crowns for next season's fruiting. Runners planted early must have frequent supplies of water for the soil is still very dry. Stir the surface of the ground lightly with the hoe for this will improve the soil and keep it clean.

Insect Pests.—Trees infested with American blight should be thoroughly cleansed after the fruits have been removed. Rub some approved insecticide on the parts affected using a rather hard or worn brush. If the trees are large, apply a paraffin and soap mixture by means of a pump sprayer. The trees will require spraying several times in order to cleanse them. If the bark of the trees is infested with the oyster scale insect, remove them with a hard scrubbing brush and some petroleum emulsion or carbolic soap and warm water. This pest spreads rapidly, so remedial measures should be applied as soon as possible after the insect is detected. The Pear Slug-worm, appearing at this season of the year, does much damage to the foliage of the Pear trees. Dust the leaves with tobacco powder and afterwards syringe with XL All wash; one or two dressings are usually sufficient. Cherries and Pears are the trees most affected by this insect. If Pears are still hanging on the trees, the tobacco powder only should be used.

Peaches and Nectarines.—Late varieties of these will require the maximum amount of light and sun heat to ripen their fruit, all leaves, therefore, that shade the fruits should be turned aside. Continue to cleanse the trees as they become divested of their fruits. Trap wasps and flies, for these insects do much damage in the middle of the day.

Cob Nuts and Filberts.—These much-prized fruits must be watched and gathered as soon as thoroughly brown or ripe. The Cobs are the latest to mature; let them be thoroughly dried before being stored. Those to be stored for the winter must be put in earthenware vessels to preserve them in a fresh condition, but even then nuts are never quite so nice as when freshly gathered.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Shading.—The roller blinds may now be entirely dispensed with and all fixed shading removed. The present time affords an opportunity to wash the roof glass externally, inasmuch as it has become touchly coated with dust during the dry weather. This should not be allowed to remain on the glass until late in the autumn, when fogs are prevalent, owing to the sulphurous gases which fogs contain having such an effect on the dust that even heavy rains will not remove it to any appreciable extent. The need of keeping the glass clean throughout the autumn months is too often overlooked, and thus is prevented the free access of light, which is one of the great vitalising factors and sources of energy in plant life.

Keeping Foliage Plants Clean.—Foliage plants are frequently left for weeks together without being sponged or washed with a little insecticide. The result is that a deposit accumulates on their leaves, choking up the pores and becoming an obstacle to the proper growth and development of the plant. Use every means available to keep the foliage clean. The value of a plant is increased by its clean, healthy appearance, and clean plants will last in good condition for years, but dirty ones are shabby in appearance and short lived. With flowering and foliage plants alike cleanliness is the first essential to successful culture.

Rhododendrons for Forcing.—As a result of the hot, dry weather, the early flowering plants may make a secondary growth upon the occurrence of heavy rains. This should be at once checked by throwing the plants over on one side, where they may remain for a few days, after which fill in the soil again. The flowering buds will then harden and the plants be enabled to flower better.

General remarks.—Poinsettias should not be left in a cool atmosphere any longer; an injudicious application of water to the roots would be very injurious whilst the plants are in such conditions. If they can be removed to a house having an atmospheric temperature of 60° 65° they will be quite safe. Abundance of air should be admitted for the first two weeks or so, otherwise the plants will become weakened and lose much of their foliage; keep the plants close to the glass and expose them to all the light and sunshine possible. It is too early to house the general stock of Chrysanthemums, but any large flowering varieties which already show any florets should be placed under cover, otherwise the dampness of the atmosphere will cause them to decay.

THE ORCHID HOUSES.

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

Dendrobiums.—Many of the deciduous and semi-deciduous species of Dendrobiums, such as D. nobile, D. aureum, D. crassinode, D. crystallinum, D. Findleyanum, D. lituiflorum, D. signatum, D. tortile, and others, together with the hybrids derived from them, will have completed their season's growth. In order to retain a vigorous constitution in the plants, and to obtain a full complement of flowers, it is necessary that the growths be thoroughly ripened. Plants, therefore, that have finished their growth (which can be determined from the terminal leaf at the top of the pseudo-bulb being developed) should be removed to a cooler and drier atmosphere such as is afforded by an ordinary greenhouse or a vinery from which the Grapes have been gathered. In cases where a large and representative collection of these Dendrobiums are grown, it rarely happens that all the plants are ready for removal at one time, and this is a decided advantage, for it allows the flowering season to be considerably lengthened. In houses devoted entirely to the culture of these Orchids, the fire heat should be

turned off on all warm, sunny days, and only in dull or cold weather should artificial heat be afforded, when the hot-water pipes may be heated to a lukewarm temperature. At night-time, if the temperature appears likely to fall below 55°, a little artificial heat should be allowed. Plants still growing should be removed to the warm stove, but on the completion of their growth they should be placed in their resting quarters. Plenty of ventilation is necessary to the welfare of these Dendrobiums, and especially when the sun is shining on the plants. They must be allowed to reach a condition of rest gradually, and it is a mistake to withhold water directly the growths are completed, for at this time the earlier formed roots send out a number of lateral rootlets, and these small roots are of much value to the plant. The surface of the compost, being fully exposed to air and direct sunshine, dries very quickly, and careful judgment is necessary to know when the roots require water. After the compost has been thoroughly soaked, no more water should be given until the whole becomes dry again; as the growths of each plant become properly matured, the amount of water given should be gradually lessened. The majority of the tall-growing species, such as D. moschatum, D. Dalhousieanum, D. clavatum, D. calceolus, D. fimbriatum, its variety oculatum, &c., are still growing freely, and they should have warm, moist treatment until growth is completed, when they, too, may be removed to a drier and a cooler atmosphere. Dendrobium superbum and its rare varieties Huttonii, Burkei, and Dearei will require similar treatment to these species. Plants of the evergreen section, as D. thyrsiflorum, D. densiflorum, D. Farmeri, D. suavissimum, D. chrysotoxum, &c., are still rooting freely, although their growths are completed. These plants should be placed in the Cattleya or intermediate house, and be given water sufficient only to maintain proper root action. The nigro-hirsute section, which includes such species as D. Jamesianum, D. infundibulum, D. Jerdonianum, D. cariniferum, D. eburneum, &c., do not require so much exposure to light and air as the species mentioned above. At their resting period they do not require much water at their roots, but they should never be kept in a really dry condition.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

The Vinery.—Vines in early and mid-season houses, from which the bunches of Grapes have all been removed, should now have their lateral growths shortened to within six or seven eyes from the main rods, for this will allow additional light and air to reach the buds, and it will help to ripen the wood and make it in a better condition for the final pruning later. Should the foliage be infested with red spider or with thrips, subject the vines to a thorough washing occasionally with the garden engine, for it is necessary to keep the foliage clean in order that the buds may mature properly. If the borders appear to be dry they should receive a copious watering. Afford plenty of ventilation both during the day and the night-time, and shading material that was placed on the glass when the Grapes were ripe should now be taken off without delay, for the wood will need the maximum amount of sun heat in order to ripen it.

Peaches and Nectarines.—During the latter part of August and the beginning of the present month it was difficult to keep the houses sufficiently cool to prevent some of the fruits from ripening prematurely. Trees from which all the fruits have been gathered will be benefited by having the old fruit-bearing wood removed. If the top lights of the house are removable, they should be taken off to allow the trees to become exposed to the air and the moisture from night dews, which are of much benefit to them.

Peach Marquis of Downshire.—This variety is of exceptional merit. Its fruits attain a large size, possess a good flavour, and are very juicy, and they have a nice appearance owing to the colour at their apex. If grown in a cool house the fruits ripen about the first week in September, but the variety can be forced into growth much earlier, and is a suitable variety for the purpose. The fruits are of a nice shape and pleasing to the eye. The tree is a robust grower, and well worthy a place in any fruit-growing establishment.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH St. Fagan's Castle, Glamorganshire.

Herbaceous Plants.—Though the spring months are considered by some to be the best season in which to prepare and re-arrange the borders and to plant out herbaceous plants, I believe that September is the best season for doing the work, provided the ground is not too dry at the time and the necessary attention can be given to it. It is an advantage if the roots can be started in the fresh soil during the autumn, and the plants established before winter. In addition, the re-arrangement can be done much easier while the colours and habits of the plants are still fresh and vivid in the memory. The borders should be thoroughly re-arranged every three years, and on each occasion the ground requires to be trenched well, and supplied liberally with manure, for, as a rule, the plants are gross feeders and readily respond to a deeply dug and well-prepared rooting-medium. When arranging the borders it must be remembered that though hardy perennial plants predominate, this class of plants should not be cultivated exclusively if a display of flowers is required for as long a period as possible. Therefore, spaces must be left for the addition in the spring of such indispensable half-hardy plants as Salvia patens, S. splendens, and S. farinacea, Gladioli, Lobelia (Cardinalis type), Canna, Paris Daisy, Calceolaria amplexicaulis, Heliotrope, Verbena, and Dahlias; also annuals such as Sweet Peas, Phlox Drummondi, Dianthus, Asters (particularly Callistephus sinensis), Stocks, Poppies, Marigolds, Lavatera, Arctotis, Anagallis, Scabious, Larkspur, Nicotiana affinis, and N. Sanderæ hybrids. In these borders even plants that are looked upon as true bedders can often be employed with advantage. Pelargoniums, Lobelia pumila, Ageratum, Begonia, Petunia, &c. In the flower garden where there are many borders, it is advisable to avoid having a sameness in the arrangement, even to the extent of not using the same kind of plants in different borders. There are many garden resplendent with borders of herbaceous and mixed hardy plants which are disappointing because of their similarity. One border often is only typical of the rest. In an ideal flower garden this defect would not exist.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Cabbages.—The seedlings will, in most cases, be ready for planting in their permanent quarters, and those that are ready should be transplanted. The strongest plants should be selected for planting on a warm border facing to the south, and these will be ready for cutting much in advance of those grown in the open. Place the plants in rows 18 inches apart and allow a distance of 15 inches between the plants in the lines. These spaces will be found quite sufficient for all ordinary purposes, and with the advantage that the plants shelter each other at an early stage of their growth when cold spring winds prevail. The plants that yielded their first crop in the spring are now furnishing splendid produce in their side growths. These plants should be encouraged to grow to their fullest extent, all decayed leaves should be removed and the ground about them kept clear of weeds. These side sprouts, or small Cabbages, are as nice when cooked as the earlier heads, and they can be had in great quantities.

Outdoor Tomatos have, in the south, been of fine quality this year. Any remaining, immature fruits, even if quite green, can be used for making Ketchup. Plants intended for winter fruiting should be shifted from the frames into the glass-house so that a good set of fruits can be secured before the winter fogs and dull weather make their appearance. I prefer cultivating Tomatos in pots at this late season of the year rather than growing them in borders, as they are more easily fruited in pots, and the growths are not so sappy and immature.

Winter Cucumbers.—Seeds of a freely-fruiting variety should now be sown in the usual way in a warm propagating pit or hot-bed. Lockies' Perfection is still one of the best varieties to sow at this date; it sets its fruits freely and these are of a medium size with a very short neck. Fruiting plants in the houses should be top-dressed with some rich material and have surplus growths cut away, which will help to prolong their season of bearing. Pruning should be performed early in the day so that the cut surfaces may become dry before nightfall, at which time the atmosphere in the plant houses is fully charged with moisture. All fruits should be cut immediately they reach a suitable size for the table in order that the plants be not unnecessarily exhausted.

Runner Beans.—Surplus Beans should not be wasted, for good use can be made of the pods by preserving them, and if the preserving is well done they are little inferior to the fresh vegetable. French Beans should be similarly treated.

French Beans.—It now being too late to make any further sowings of these in cold frames, their culture as forced vegetables will now have to be considered. Where Melons are finished for the season and the beds still remaining, it is an excellent plan to dig over this material and sow the beds with a good climbing variety of this vegetable. Princess of Wales is the best and heaviest cropper with me. These climbers are better adapted to resist the fogs that are prevalent in many places during the short days than dwarf plants. They also set their flowers better, and give a far greater return than can be had from the old system of cultivation in pots. Where, however, there is not the accommodation necessary for the climbing variety, seeds of the dwarf type should be sown in pots. The pots may stand outside for a time yet, or be given the protection of a frame. Canadian Wonder is one of the best for this sowing, but for the middle of winter Ne Plus Ultra and Osborn's Forcing are two of the best, and where space is very limited Laxton's Forcing may be sown.

THE APIARY.

By CHLORIS.

Successful Bee-keeping in 1907.—The spring of 1906 caused many failures among bee-keepers, and we ought, therefore, to take stock and seek the causes of the disasters. Unfortunately, among bee-keepers, as in every other craft, there is procrastination, a tendency to leave the bees to chance, with the result that when spring arrives the bees are either dead or starving, and we blame the climate, forgetting it is our own neglect. If the coming season is to be successful, granted seasonable conditions, we must endeavour to have our stocks strong by the end of September. These ideal conditions can only be secured by feeding the bees.

Feeding.—The honey-flow of 1906 has practically ceased. Most of us have encouraged the little insects to store as much honey as possible in the supers. Probably, the bees have neglected the brood chamber, and, unfortunately, many careless apiarists, thinking only of their present gains, forget to inspect the lower chamber and leave the bees to chance and to almost certain death. In a few instances the bees may have stored more than a fair share below, and, as a result, the colony has not raised sufficient brood and is weak. Both conditions are certain to bring failure in 1907. In each case feeding will be necessary to induce the queen to lay, so that there may be a large quantity of young bees flying in the coming spring, and to prevent starvation in the former instance. Let us deal with those that have stored only a little in the brood chamber. Make some good syrup by using white sugar and water in the proportion of 2 lbs. of sugar to one pint of water, and boil it well. Feed rapidly, placing the syrup on the frames lukewarm, and wrap up the bottle warmly to prevent the escape of valuable artificial heat. All the changing should be done in the evening when the bees have ceased to be on the wing, taking care to spill no syrup, and by this means we may ensure that no robbing will be started, if the entrances are closed so that only one bee may enter at a time. When we deal with the others we must remove some of the combs and extract the honey, or replace them by empty drawn-out foundation. Our object in this case is to secure as much brood as possible. The syrup need not be so thick as in the former case, but the bees must not be allowed to take down the syrup so quickly. This may be achieved by covering a portion of the mouth of the jar with tin or zinc and thus limiting the access to the food. If the bees have about 30 lbs. of stores, and are strong, there will be no cause to worry about their safety next spring, and, as a consequence, the bees will not leave their hives on cold days to be cut down by cold and pitiless winds. Remember that burnt syrup will cause the death of the colonies, so stir well whilst it is on the fire. A few bee-keepers have made syrup by mixing the sugar with boiling water and stirring until the sugar is completely dissolved,

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Sept. 25.—British Gard. Assoc. Exec. Com. meet. Roy. Hort. Soc. Coms. meet. Onion Fair at Birmingham (5 days).

SATURDAY, Sept. 29.—Michaelmas Quarter Day. Dutch Gardeners' Society meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—55·9

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, September* 19 (6 P.M.): Max. 61°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, September* 20 (10 A.M.): Bar., 30·2, Temp., 61°, Weather—Fair, but overcast.

PROVINCES.—*Wednesday, September* 19 (6 P.M.): Max. 63° Southampton; Min. 53 East Coast of Scotland.

SALES.

MONDAY AND WEDNESDAY—
Sale of Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY TO FRIDAY—
Bulbs at Protheroe & Morris's rooms, each morning.

TUESDAY, WEDNESDAY AND THURSDAY—
At Dulcote's, Broad Water Down, Tunbridge Wells, a collection of Orchids, by order of Walter Cobb, Esq., by Protheroe & Morris, at 12.30 each day.

FRIDAY—
Sale of Fruit Trees and Roses, at The Nursery, Downham, Norfolk, by Protheroe & Morris.

Rain.

We do not suppose there is any other word in our language so dear to the heart of the English horticulturist, or one which is so frequently in his thoughts or on his tongue, as that little word rain. At the same time we could not well select any term more distasteful to him than that of drought. It may seem strange, but it is nevertheless true, that in the British Isles, the climate of which is generally regarded as dull and humid, the lack of sufficient rain, during at all events the growing period of the year, is one of the most serious wants felt by gardeners and farmers. The apparent contradiction in these two views is partly to be explained by the fact that even in those summers where the total rainfall is sufficient for all reasonable purposes, it is often so irregularly distributed over the season that our plants derive comparatively little benefit from it.

The actual requirements are really by no means extravagant, for all we need is sufficient rain at the beginning of the summer to thoroughly saturate the soil and subsoil, and afterwards the modest quantity of about half an inch each week during the rest of the season.

Unfortunately we seem just now to be passing through a series of summers in which even the total rainfall is deficient, to say nothing of its unequal distribution. By summer is here meant the six months beginning with April and ending with September, when vegetation is in more or less active growth. Taking the last twenty-three such summers, there have been only three in which the rainfall has been in any way in excess of the average, the remaining twenty being all more or less dry. Some comfort may, however, be derived from the consideration that there is no reason to suppose that our climate has altered and is consequently becoming drier than formerly. Also in the fact that the previous twenty-seven summers were more than half of them wet, and in some instances, as notably in 1879, far wetter than could be desired.

Our thoughts naturally turn to this question of rain on the welcome appearance of "*British Rainfall.* Although this is the forty-fifth annual issue of this interesting and valuable publication, there are no doubt many of our readers who have not yet seen a copy of the work. Its history is briefly as follows:—In 1860 Mr. G. J. Symons, F.R.S., conceived the idea of gathering together from different parts of the country all the then available records, with a view to studying the character and distribution of rainfall in these islands—questions of considerable importance to the engineer as well as to all interested in agricultural and horticultural pursuits. In that year he was only able to obtain satisfactory returns from 168 observers. But as years went on, owing to his untiring zeal and the skill with which he dealt with the data placed at his disposal, the work increased so rapidly that at the time of his death in 1900 the number of observers working under him had risen to over 3,000, and the annual issue, originally a four-page leaflet, was a substantial volume of more than 200 pages. Since that time this remarkable rainfall organisation has been practically under, and is now entirely under, the direction of Dr. R. H. Mill, who, while retaining the admirable plan and general scope of the work devised by his predecessor, has year by year added new features to it in order to keep it abreast of the times, and to extend its usefulness. To show how ably the work is now carried on it may be stated that at the present time *British Rainfall* contains carefully discussed and classified observations from over 4,000 observers distributed all over the United Kingdom.

Turning to the volume before us it is surprising how even a rapid glance through its pages and over the many interesting maps which it contains causes our ideas on the subject of the fall of rain in this country to become enlarged. For instance, we learn that last year as much as 171 inches of rain fell during the twelve months at The Stye, in Cumberland, whereas Shoeburyness, in Essex, the driest spot in 1905, had to be content with a meagre 15 inches. Dr. Mill, putting the question in another way, confirms what we have previously stated as to the interest of the gardener in rainfall being confined principally to the summer half of the year, when he says "the rain which falls in the winter half-year, during the rest time of vegetation, is of comparatively little concern to the farmer." Taken as a whole we find the year 1905 to have been dry, not only in England, but also in Scotland and Ireland. Then, as we are principally concerned with the summer rainfall, we turn to the maps for the three months of that season, where we at once see that throughout the southern half of England the weather in June proved as wet as could be wished, whereas in other parts of the country the fall was below average. July was a dry month everywhere, while August was, on the contrary, almost universally wet.

We began by saying how greatly droughts were dreaded by all interested in gardens. And no wonder, considering that of all the enemies of our gardens none is quite as destructive or injurious to plant life generally as a prolonged drought. The "absolute drought" of the meteorologist is a period of more than 14 consecutive days without rain; while a "partial drought" is defined as a period of more than 28 days, the average rainfall of which does not exceed one hundredth of an inch per day. But to the horticulturist neither of these definitions convey his own idea of what he understands by a drought, which might be described as any dry period injurious to vegetation. For instance, there not infrequently occurs long periods of dry weather, with occasional slight falls of rain, which are practically, under such conditions, of no service whatever to vegetation, and yet which would prevent that painfully long and trying spell described as either an "absolute drought" or a "partial drought." On referring to the chapter on heavy rains one of the principal causes of the irregularity of our summer rainfall appears to be thunderstorms, which visit certain localities with considerable regularity, while other places only a few miles away are rarely affected by them. We have only indicated a few of the interesting questions dealt with in *British Rainfall*, but trust that enough has been said to induce many garden lovers to add the last annual volume to their library, and so be in a position to study it for themselves.

* *British Rainfall* (Ed. Stanford, Long Acre, price 10s. 6d.).

OUR SUPPLEMENTARY ILLUSTRATION to the present issue shows a fruiting spray of Ochna multiflora, a stove shrub which was first introduced to this country in 1820. The species subsequently fell out of cultivation and was re-introduced, but is rare even at the present time except in botanical gardens. The flowers, which are yellowish, last only a short time, but the black fruits, together with the enlarged crimson receptacles and calyces, are very ornamental. The shrub will grow 5 feet or more in height and may be propagated by half-ripened shoots obtained during summer. Our illustration was prepared from specimens exhibited by Mr. CHAS. TURNER, Royal Nurseries, Slough, at one of the Royal Horticultural Society's meetings.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will be held on Tuesday, September 25, in the Society's Hall, Vincent Square, S.W. A lecture on the "Distillation of Perfumes from Flowers" will be given by Mr. J. C. UMNEY at three o'clock.

THE ROYAL HORTICULTURAL SOCIETY OF IRELAND will hold a fruit and Chrysanthemum show, and a conference on fruit, in Ball's Bridge, Dublin, on October 24 and 25, 1906. The secretary is Mr. W. KEATING, Junr., 5, Molesworth Street, Dublin.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.—At a meeting of the association to be held at Winchester House, Old Broad Street, E.C., on October 2, at 7 p.m., Mr. J. F. H. GILBARD will deliver a lecture on "The Bacteria of the Soil," illustrated by lantern slides.

THE HONEY SEASON IN THE NORTH.—A correspondent, writing from Aberdeen, states that the cold weather in April and May caused much loss to bee-keepers. Although the honey that was gathered in these months is darker in colour than clover honey, it is equally good, and is obtainable in considerable quantities. In some districts June was propitious for swarming, but in others when the Clover season began, in that month the temperature continued low and the bees were very often unable to leave the hives. This was a source of great disappointment, as seldom has the Clover bloomed so profusely as it did this year. In many districts splendid work was done all through July, even weaklings pulled up well by the closing days of the month. August, being partially wet, was not so beneficial till towards the close, when brilliant sunshine came, and just at the time too when the late Heather bloom was at its best. For "Heather men" the season will have excellent results. During the great heat wave the appearance of the hives was remarkable. Every nook and cranny was crammed full of bees, and the strongest hives not only filled their body box but as many as four crates of sections (84 lbs.). Many hives have produced over 120 lbs. surplus, but the average may be put down at from 50 to 60 lbs. The current price per pound in rural districts is 6d. and in some exceptional cases 7d. In cities the price in retail shops is one shilling and even more. I have heard of a profit of over £30 being obtained from a few hives, but the cost of feeding the bees during the winter season may not have been taken into account. When we consider that a single bee will not collect more than a teaspoonful of honey in a season it becomes evident what an extraordinary multitude there must be at work to produce the large quantities of honey which have been placed on the market.

A NEW TEXTILE PLANT FROM BRAZIL.—For some time Dr. V. PERINI, a Brazilian gentleman, and Mr. KNIGHT, a member of the English firm of KNIGHT, HARRISON & Co., of Rio de Janeiro, have made experiments in the cultivation of, and preparation for, the market of a plant, Canhamo braziliensis "Perini," discovered in Brazil by Dr. V. PERINI. Until now they have planted an area of 150,000 square metres, and the Government of the State of Rio de Janeiro have recently allotted them the State property of Farenda Boa Victa, two square kilometres in extent, on the condition that besides the establishment at that place they establish another at Nictheroy for the preparation of the material for market. The necessary machines for the work are already imported. An importation of the fibre to the European market has met with a favourable reception, and has been woven into stuff for pocket handkerchiefs, and spun into cordage, laces, and made into fine sorts of paper. The fibre may be brought to European markets for about £40 per ton for linen weaving, and the stalks for the fabrication of paper for £12 per ton. The short fibre and refuse from the manufacture it is intended to find a use for in Brazil as string, &c. The returns are expected to be satisfactory, owing to the many uses the fibre can be put to, its excellent quality, the fact that three harvests can be obtained in the year, and the cheapness of production. Dr PERINI has secured the sole right to the preparation of the material for textile and paper making for a period of 15 years from April 20, 1904.

THE GREENHOUSE AT KEW.—The flowering period of many plants in the greenhouse has been considerably shortened by the hot, dry weather. A showy plant now in flower is Ipomœa rubro-cærulea, whose trailing growths ramble among Asparagus plumosus, which sets off the beautiful light blue of its flowers. In pots and on the roof Plumbago capensis variety alba is flowering profusely. Another subject which does equally well, grown either as a pot plant or against a pillar, is Lantana salvifolia (delicatissima). The long slender growths and magenta flowers are distinct from most of the Lantanas. The climbing Dahlia, Hidalgoa Wercklei (see fig. in *Gardeners' Chronicle*, Aug. 4, 1900, p. 83), has now a nice sprinkling of bright scarlet flowers. Although this plant is never a free bloomer, the trailing growths hanging from the roof are very graceful. The plant is really a perennial, but it is best grown as an annual from cuttings inserted in autumn, as old plants are liable to die in the winter. A young plant of Mandevilla suaveolens, only planted last year, has made growths fully 20 feet in length, and its pure white flowers are very fragrant. For some considerable time, hybridists (especially Continental) have been raising hybrids of Nerium Oleander, the common Oleander. Very satisfactory results have been obtained, and a number of these new seedlings, both double and single flowering kinds, are now in flower in No. 4. Some of the double flowers are almost as large as Carnations, but they are not quite so full of petal. Most of the Costums (Habrothamnus) soon grow into large specimens, but C. Smithii is an exception, and forms useful decorative plants with pale rose-coloured flowers, 1 to 2 feet high, when grown in 5-inch and 6-inch pots. The flax-leaved Chironia, C. linoides (exifera), now in flower, seldom fails to produce a plentiful supply of flowers if given perfect drainage. One of the most beautiful Cupheas is C. micropetala, but the showy part of the flower is the large scarlet calyx tipped with yellow. As the name denotes, the petals are small. A singularly distinct and striking flower is that of Lilium nepalense. The mouth inside is purplish black, the reflexed segments being broadly tipped with yellow; the outside of the petals are of a greenish yellow shade. A good batch of the pretty small-flowered, rose-pink Melastomad, Bredia hirsuta, a by no means common Japanese plant, attracts much attention. A useful subject for large tinctures and one now in bloom is Calceolaria Burbidgei. It will commence to flower when about 2 feet high. A small plant of Incarvillea (Rogeria) Delavayi has flowers not unlike those of the Laurestinus, each growth being terminated with a large cyme of sweet-scented, pink flowers.

FLOWERS IN SEASON.—From Messrs. JOHN PEED & SON, Roupell Park Nurseries, West Norwood, we have received a number of flowers of tuberous-rooting Begonias, of both double and single varieties. They were gathered from the open ground, being seedlings raised early in the present year. They represent a good strain of this useful bedding plant. The colours of the flowers include shades of scarlet, rose, yellow, apricot, orange, and white. Some of the "crested" type of flowers were included.

ACETYLENE GAS IN PLANT GROWING.—The results obtained in the elaborate experiments with acetylene on plant life at Cornell University, as set forth in Professor JOHN CRAIG's paper, is what would be expected, when the close approximation of acetylene illumination to sunlight is considered. The sun, as everyone knows, stands for life and development in plant culture. It is the chief element upon which the gardener who forces flowers and vegetables under glass depends. The dark periods when the sun refuses to reveal itself are as well dark periods to the spirits of the forcing man. When, therefore, he can turn to what is virtually sunshine, as produced with ease, economy and in abundance by acetylene, he at once finds help over hard places. Professor CRAIG begins his paper by quoting Munsterberg as showing the nearly equal colour values of the sun and acetylene as revealed by spectrum analysis. It is a showing such as no other artificial light reveals. In that brief comparison is found the basis of the success with acetylene in plant culture. The benefit from acetylene was found not only as making up for deficiency of sunlight, but in adding to the efficiency of sunlight for plant growth. In the experiment on 150 different kinds of plants, with few exceptions the growth was stronger, while the time of bloom and of maturity was materially advanced. For instance, Strawberries were brought into bearing 16 days, or more than two weeks earlier as a result of acetylene added to sunlight. In the case of Geranium Pelargonium and Lilium blooms, the gain was even greater, being sometimes three weeks ahead. In many plants the amount of bloom was increased several fold through the use of acetylene. Radishes are a common crop with the under-glass grower. Not only was the maturing period of Radishes shortened 20 per cent., but the product was increased in weight under the influence of acetylene as compared with sunlight alone. It is not overlooked that the cost of carbide must be reckoned, but with the season of growth shortened by weeks, a large, direct reduction in the always costly fuel bill is made. The force of this point is that the saving on fuel comes at a time when the outside temperature demands liberal coaling in order to provide the requisite forcing heat. The increase in the product from [the use of] acetylene as noted in Radishes and in some flowers, likewise will go directly to offsetting the outlay for acetylene. *Acetylene Journal, Chicago.*

IMPROVED VARIETIES OF ZONAL PELARGONIUMS.—In this country there are many fine varieties of Zonal Pelargoniums in cultivation, which, owing to a certain tenderness in growth and blossom, cannot with safety be employed in out of-doors decoration. We read, however, in the German journals, in the accounts of the recent show at Cassel, of an exhibitor, Herrn GEORG BORNEMANN, who had some remarkable varieties which for form, and size of the blooms, and heads could not be improved upon. H. BORNEMANN, with but few exceptions, showed flowers of varieties of his own raising; his chief aims being to obtain abundant flowering and ability to withstand the influence of the weather, together with good habit.

A PALM HOUSE FOR BUDAPEST.—It is proposed to construct, at the cost of the municipality, a great Palm house in the vicinity of the recently erected artesian baths, of an area of 1,870 square metres, with small glasshouses for plant cultivation on two sides. The cost will amount to 435,000 kronen. Besides this large house there will be built later an Aquarium, and various glasshouses for plant culture.

THE ROYAL NURSERIES, MAIDSTONE.—On the 12th inst., a party of gardening friends met by invitation at the above nurseries on the occasion of Mr GEORGE BUNYARD, the head of the firm, celebrating the completion of 50 years of business life. We offer our congratulations, and trust that Mr. BUNYARD may have yet many more years of useful and successful work.

AREA UNDER RUBBER IN CEYLON.—Mr. J. C. WILLIS, Director of the Botanical Gardens, Peradeniya, Ceylon, writes as follows in the *Tropical Agriculturist*: "A very good answer to those who are claiming that Malaya is the premier rubber planting country is supplied by the statistics just to hand for the new Edition of FERGUSON'S *Ceylon Handbook and Directory*, which show that the Ceylon area in rubber, or to be planted during this present south-west monsoon (and consequently probably nearly all planted by now), is no less than 104,000 acres, besides which there are probably 15,000 or 16,000 in native hands, amounting in all to 120,000 acres. Mr. CALLEDHER'S report on the Federated Malay States for 1905 shows that at the end of that year they had only

38,000 acres planted in rubber, with about 100,000 acres alienated for this product, and it is hardly likely that they can have planted the difference since. Even allowing that the Ceylon estimate is too much by 25,000 acres, and the Malayan too small by the same amount, and allowing another 25,000 acres for the rubber in the Straits Settlements and Johore, this will not make the figures meet. Already Ceylon alone contains perhaps enough for nearly one quarter of the world's consumption."

Publications Received.—*Journal of the Board of Agriculture* for September. Contains, along with other information, a useful article by Mr. A. D. Hall on "How long does lime last in the soil?"—*The Forest Flora of New South Wales* (J. H. Maiden), vol. II., pt. 10; *Proceedings of the Academy of Natural Sciences of Philadelphia*, vol. 58, pt. 1.—*University College, Reading*. Prospectus of course of instruction in poultry keeping.

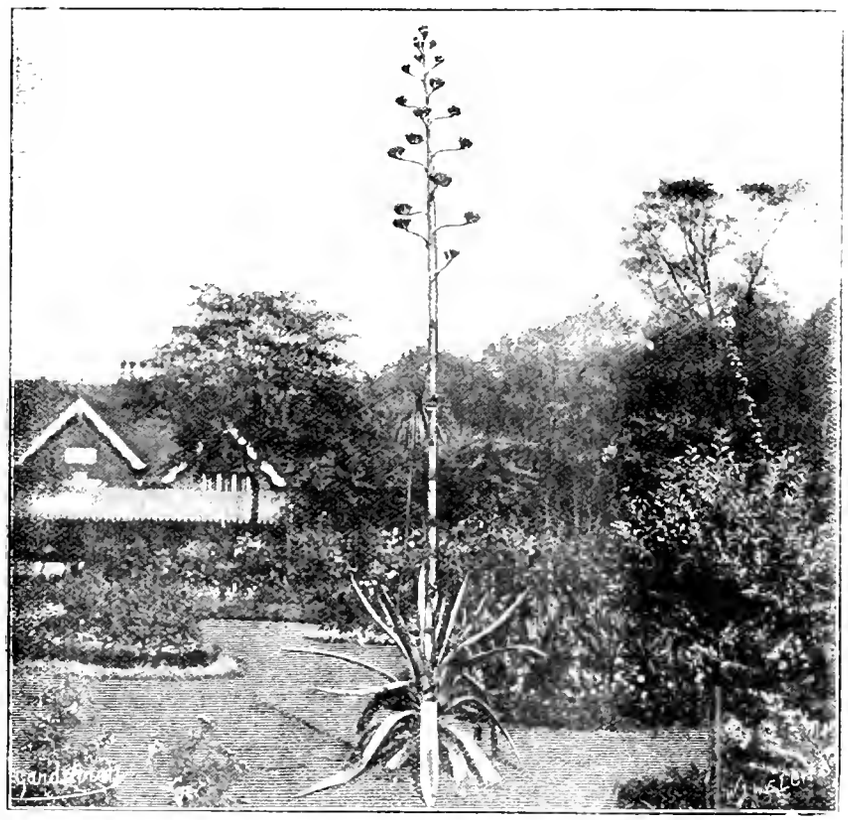


FIG. 88.—AGAVE AMERICANA FLOWERING IN THE ZOOLOGICAL GARDENS, REGENT'S PARK.

THE FERNERY.

HARDY FERNS IN AUTUMN.

As regards the removal, division, or planting generally of hardy Ferns, the early autumn is a very good time to carry out such operations and for several reasons. First, any damage caused to the fronds matters little as the season is so nearly over. Secondly, the roots have still time to take hold of the ground in their new positions before frost sets in to any appreciable degree, and finally, they are assisted in establishing themselves by the cool, moist conditions usually prevalent at this season. Under these circumstances they will start growth in the spring as well-established plants, and, therefore, there is little choice between the two seasons as regards success in planting. As many of the fronds, especially of deciduous species, will be shabby or fading, all such may be removed without detriment to the plants, and with the evergreen ones there is usually an accumulation of dead old fronds around the crown which may also be removed, a careful look-out being kept for those basal bulbils which often form on the finest forms of Shield Ferns (Polystichum), and afford capital opportunities for increasing the number, since if cut off with, say, an inch of the old frond base, and inserted as cuttings, they are sure to make roots and establish themselves, while if left *in situ* they are apt to be smothered, or if they survive handicap both themselves and the parent plant by the crowding and intermingling of fronds and roots. All the crown-forming Ferns make finer plants if the side-shoots or offsets are removed, and where long-established plants have been allowed to form dense clumps by such accumulation, it is good policy to dig them up bodily and pull the individuals apart, planting them singly. As a rule this is a simple operation, as each one is really distinct and has its independent roots, while the original connecting link is easily broken or cut, and the roots and fronds disentangled.

If the weather be dry after replanting, the Ferns must be watered so long as any fronds are green, but if thoroughly well watered in when planted, the ordinary rainfall and dews will suffice, since no fresh growth this season is likely to assert itself above ground. Good garden soil suits most species well, but if it be at all heavy there must be a liberal admixture of leaf-mould to lighten it. With regard to aspect it must be remembered that all Ferns are shade lovers, and thrive best where, while plenty of top light is available, they are screened to some extent from blazing sunshine. Wind, moreover, is detrimental since the fronds are too delicate to stand, without damage, the friction set up by strong breezes. Hence a north or north-east aspect is good as regards modified exposure to sun, provided there is some wind-screen in the vicinity to break the force of the blast. If, therefore, it be a question of rockery construction a deep dell is the ideal to be aimed at as far as local surface conditions permit, while to plant Ferns in an exposed mound is simply to court failure. Given, however, ample moisture at the roots Fern fronds are very accommodating and stand far more sunshine that would be expected, but if so exposed and the soil gets dry, they are scorched immediately beyond recovery so far as appearance goes. Under north walls we have seen fine collections, and these positions should be utilized. Ferns under glass in pots are best left alone until the spring. The soil conditions in pots are not so favourable as those outside and lacking the circulative stimulus set up by active root growth, the soil is very apt to get sour during the winter rest, which in the open is not the case. During the season of rest watering must not be omitted, though of course not much is required. Ferns in their native habitats are usually soaked the winter through, and their crowns are more or less buried in dead leafage, also wet most of the time. It is therefore fatal to let pots containing Ferns get dust dry as is too often done, and if space be precious in the greenhouse, the pots can quite well be spared this risk by being buried in a shady garden corner out-of-doors, to be lifted again when the next season's growth is imminent. For those in the open also a good mulching of dead leaves is beneficial. *Chas. T. Druery, V.M.H., F.L.S.*

AGAVE AMERICANA AT THE ZOOLOGICAL GARDENS.

THIS stately plant flowers occasionally in this country, but it is a comparatively rare occurrence, especially so near to the metropolis as the specimen shown at fig. 88, although in our issue for January 31, 1903, two of these plants flowering in Victoria Park, London, formed the subject of our supplementary illustration. The plant figured on the present occasion is growing in the Zoological Gardens, Regent's Park, the pot in which it is cultivated being plunged in the grass on the lawn round about the refreshment pavilion. The flower spike is from 18 to 20 feet in height, and bears on its upper part about 20 axillary panicles, as will be seen from our illustration. Near by is a companion plant, a much larger and finer specimen, and with leaves uninjured, but as often obtains in the plant world, it is the weaker one which has flowered. Hundreds of visitors have been attracted by the unusual sight of this plant in flower, and it is commonly spoken of as the "century" plant from the erroneous belief that the Agave only flowers once in a hundred years. It is also known as the American Aloe, but as the Aloe belongs to a different order of plants, there is no justification for the name.

In more favoured climes, such as the south of France, Agaves in flower are common objects, and in our issue for December 25, 1875, is an illustration of a bed containing a dozen or more plants in flower in the gardens of Mr. Smith, in the Scilly Islands.

The Agave under notice is situated among a series of excellent flower beds, and at the background is a charming border furnished with many gay subjects, among which Canna Alphonse Bouvier is conspicuous. Many of the beds are furnished with well-grown specimens of Celosia pyramidalis, in red and yellow shades, and although these are now somewhat past their best condition, enough remains to show what a beautiful display they have made.

Another plant that is worthy of mention is Eucalyptus cordatus, and in several of the beds this plant is utilised. A good combination was seen in a bed containing Pelargonium Mrs. Marshall, intermingled with Salvia Horminum, and Flower of Spring Pelargoniums, with a band of the dwarf Pelargonium Golden Fleece. Another pleasing bed was furnished with Fuchsia Mrs. Roberts and Verbena Miss Willmott. Abutilon Thompsoni, carpeted with Begonia "Vesuvius" and edged with Pelargoniums, furnished a choice display.

[In respect to the Agave we may remark that the flowers are not yet perfectly open, and visitors to the gardens during the next fortnight will, therefore, be able to see them.]

DOUBLE GLOXINIA.

To Mr. Leonard Sutton we are indebted for the specimen whence our illustration was taken (fig. 89). The calyx and corolla were normal, but on looking down into the tube of the corolla the cavity appeared filled up with a dome-shaped mass of white petals. Further examination showed that there were four stamens cohering by their anthers in the usual way, whilst the filaments were dilated on each side into a petal-like

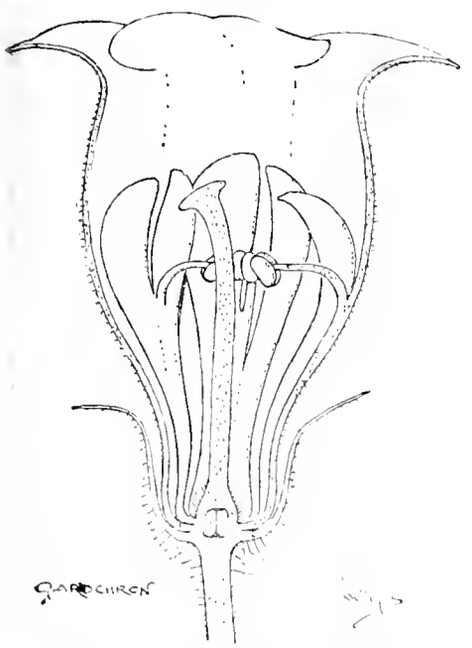


FIG. 89.—GLOXINIA
Section through the flower showing the petaloid stamens surrounding and arching over the ovary.

outgrowth. These petaloid stamens were sometimes free, at other times connate with the corolla tube for half its length. Time will show whether this arrangement can be so far developed as to be acceptable to florists. At present it is a curiosity only. We have not seen a similar case before, and we are not aware whether a petaloid development of this kind occurs normally in any of the genera of Gesneraceæ. The flower was one of five on the same seedling plant, all showing the same condition

MODERN BOTANY.

(Continued from page 177.)

"Let us now attempt an analysis of some of the causes which have led to this condition of affairs.

"In the first place, our two national herbaria (Kew and the British Museum) stand apart from the ordinary botanical current. They are administered, the one as a portion of the Kew establishment under the Board of Agriculture, the other as a department of the British Museum under a Board of Trustees. Neither has any connection, direct or indirect, with any university organisation. The keepers and assistants as such have no educational functions allotted them; I mean positions in these herbaria carry no teaching duties with them. There are no facilities for teaching; there are no students. No machinery exists for training recruits or for interesting anybody in the ideals and methods of systematic botany. A recent event illustrates my meaning better than any words. My friend, Dr. Rendle, accepted the Keepership of the Botanical Department at the British Museum a few months ago. Previously, as assistant, he had held a lectureship at a London college. One of the first consequences of his new appointment was his retirement from the teaching post. Now that was bad. Under the conditions which one would like to see there would have been no resignation. On the contrary, the Keepership should have entitled Dr. Rendle to promotion to a full professorship. I do not mean a great post, with elementary classes, organisation, and so on, but one in which he would be occupied with his own branch, giving a course for advanced students, let us say, once a year during the summer months. Nor is that all. Such are the vagaries of our university organisation in London that we run some risk of losing Dr. Rendle from the Board of Studies in Botany. Automatically he ceases to be a 'recognised teacher,' and unless some loophole can be found the connection will be severed.

"Next we come to the question of routine duties. These are heavy in herbaria, and must include a great many that could be satisfactorily discharged by handy attendants. As in the case of those who work in laboratories, half a man's time should be at his own disposal for original investigations. It is important, for a variety of reasons, that the members of the staff should take a leading part in advancing systematic botany.

"Then there is another way in which a great economy could be effected in effort, time, and money. This is the transfer of the collections and staff of the Botanical Department from the Museum to Kew. This is a very old proposal, first seriously entertained some fifty years ago after the death of Robert Brown. There must be endless files of reports and Blue Books in official pigeon-holes dealing with this question. The most recent report of a departmental committee is known to all interested in the matter. From the character of the evidence tendered it is not surprising that no action has been taken. I am at a loss to find any adequate reason for the continuance of two separate herbaria. It has been urged, no doubt, that botany would suffer if unrepresented in the Museum collections at South Kensington, and that the dried collections and herbarium staff are a necessary adjunct to the maintenance of a botanical museum. But there is little force in the contention. The specimens that go to make a herbarium are not proper subject-matter for museum display; nor is there anything about herbarium work which intrinsically fits the staff to engage in the arrangement of museum cases. The function of a botanical museum is to interest, stimulate, and attract. It should convey an idea of the current state of the science, and particularly of the problems that are to the front, in so far as it is possible to illustrate them. It requires a curator with imagination and ideas, as well as an all-round knowledge of his subject. He must also be an artist. Logically, there is no reason why a museum should be part of the same organisation as systematic collections. There is, indeed, a danger of making the museum too exhaustive. I am speaking, of course, of a teaching museum, which belongs really to the province of a university, or university extension if you like. Systematic collections kept exposed under glass are luxuries. All the world agrees that the museum side is admirably done at South Kensington, and most people attribute this success to the systematic element which is paramount behind the scenes. But, as we have seen, this is a fallacy, and the 'museum argument' for keeping the herbarium at South Kensington may be ignored.

"By the fusion of the herbaria at Kew one would look for increased economy and efficiency, more time for original work as distinguished from routine duties, and a more complete specialisation."

(To be continued.)

HOME CORRESPONDENCE.

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

A NEW WHITE BEGONIA.—In the centre of a showy arrangement of tuberous Begonias in the gardens of T. F. Blackwell, Esq., The Cedars, Harrow Weald, is a very handsome white form in which the female flowers are nearly as large and showy as the male blooms, and in both sets the floral segments are finely crimped. The batch was raised by Mr. J. Dinsmore, the head gardener at The Cedars, and several exceptionally good varieties have flowered out of it, but none is equal to the white one alluded to, especially in the extraordinary size of the female flowers. There is also a good show of flowers on the shrubby Begonias which are well grown at The Cedars and continue to bloom in the glasshouses throughout the winter. *B*

HYDRANGEA HORTENSIA IN TUBS.—I enclose a photograph [not reproduced] of Hydrangea Hortensia growing in a tub. We plant them in these receptacles for placing about the pleasure grounds, and one great advantage of this method of culture is that the plants remain a long time in flower, and up to the present time they have been effective for a period of about four months. The photograph shows 133 fully expanded flowers, and will furnish an illustration of their usefulness when grown in tubs. *J. Thompson, Delamere House Gardens, Northwich, Cheshire*

A CHAMPION VEGETABLE CLASS.—I cannot but think that Mr. Gibson, p. 184, is asking for something of an extraordinary nature in inviting the Shrewsbury authorities to provide a special class for the vegetable champions. One would think he had forgotten several that of late years have been provided for such a purpose, for instance the class at Edinburgh last year and the one at Chiswick but a short time previously. It is but fair to ask, after witnessing the various prizes gained at the late Shrewsbury show by the champion growers, how many would compete in such a class as Mr. Gibson now suggests? When we read that Mr. Beckett won Messrs. Bull's cup and Messrs. Carter's premier prize, Mr. Gibson Messrs. Sutton's, Mr. Pope Messrs. Sydenham's, and so forth, and that in no one class were these growers found competing against each other, what conclusion must be drawn from such incidents? What I would suggest in future competition, is that all vegetables should be really of the varieties they are labelled in each class. It is so common now at shows to see classes made for so many kinds to represent the varieties introduced by the donors of the prizes. This is reasonable as intending to illustrate the advantage of one variety of Runner Beans, or Carrots for example, over another, and as a means of showing to visitors and customers the advantage of selection in stock and variety. What is the result of such classes so liberally provided by seedsmen? The answer can readily be found if at any of the leading shows an interested spectator will listen to the criticism of visitors when examining the exhibits: "I see no difference in the Tomatos in this exhibit named Perfection and the Epicure or Temptation, or even those Bountifuls in Mr. Brown's first prize exhibit." "Why, Mr. Thomson's Prize-taker Leeks are quite like Mr. Robinson's Monstrous variety. What is the difference between Mr. George's selected Duke of Albany Pea and that new variety staged by Mr. Johnson at our own show last week? It is bewildering; I did think by coming here I should be able to select my varieties for next season, but now I am in a worse plight than ever." *Nous Verrons*

PEACH CULTURE OUT-OF-DOORS.—The excuses one reads about the difficulty of producing even Peaches of reasonable quality out-of-doors makes one smile when one remembers what used to be done in this direction less than twenty years ago. Those persons who had knowledge of the magnificent Peach and Nectarine trees at Heckfield, under the care of the late Mr. Wildsmith, or those at Broadlands Park, near Romsey, under the management of Mr. Thirlby, must look for reasons other than climatic influence to account for the decline in the production of high-class fruits. Apathy on the part of the gardener contributes in no small degree to the ill-success, for many nowadays seem to think that Peach culture under glass is the aim and end of all. Now that gardeners are so much engrossed in adding glasshouses to the garden—and rightly, too—to meet the many demands for plant and flower production, they lose interest in, or, in some instances, do not cultivate a taste for, out-door Peach culture. Another reason is that when a new gardener takes charge of a place where outdoor Peaches have perhaps been the pride of his predecessor, he devotes all his energies to vegetable culture, because he can exhibit these, whereas little in the exhibition arena is procurable from Peaches. Neglect of minor details in culture quickly shows itself in a difference in the appearance of the trees. In many instances these are condemned; they require replacing with superior (?) varieties. This is done with a flourish, the trees receive a fair start for a season, and as quickly fail, and thus Peach culture out-of-doors is condemned. The employer listens to the arguments put forth, such as an unsuitable

climate, and there is an end of the attempt. This is no fanciful picture, but a reality that can be seen every day, if persons will open their eyes and also give some thought to the subject. I will instance a few reasons why Peach culture is mismanaged. Take, for example, a season like the present. A tree has perhaps furnished a moderate crop of fruits in August or the early part of September, but after the fruit is gathered the trees are forgotten: not a drop of water is given to the parching roots, and they must be in a very dry condition, especially if at the foot of a high south wall after such a spell of heat as we have recently experienced. How can trees, under such conditions, carry out their natural functions of bud formation and maturation for the following season's fruit crop? It will be generally agreed that the foundation of the fruit crop is laid during the preceding season. Without a sufficiency of moisture at the roots, how can the trees accomplish this? Another reason I would advance for failure is neglect in dealing with insect pests. In some seasons green and black fly are both prevalent, and in the case of these pests twelve hours' neglect to eradicate them will do much to cripple the growth of the trees for the whole of the season. Instead of applying prompt remedies, the insects are neglected, until the leaves are curled and the growth is so crippled that recovery is altogether impossible. Again, at the end of the summer, and after the fruit is gathered, red spider often appears upon the leaves owing to neglect in supplying the roots with moisture, and so severely does this pest prey upon the energy of the tree, that its natural functions are completely crippled, and, instead of healthy leaves, which would tend to the production of plump buds, the leaves are limp and colourless, and the buds are weak and puny. Much more might be advanced to prove that non-success in Peach culture out of doors is not entirely owing to climatic influence. When walking round Lord Battersea's charming garden at Overstrand, near Cromer, on September 10, I noticed a wall about 10 feet in height facing to the south that had been furnished about three years ago with Peach trees, and these were carrying an excellent crop of highly-coloured fruits. In front of the trees was a 4-foot alley, afterwards a wide border of herbaceous plants, and then a Pergola, which, at certain seasons of the year may rob the trees of some sunlight. The wall was faced with cement. In the mind of some persons this material is not considered the best for the purpose, but it has its advantages in not providing a harbour for insect pests, as do some old brick walls. The varieties of Peaches were Barrington, Duchess of Cornwall, Gladstone (very fine), Goshawk (especially rich in colour), Hale's Early, Princess of Wales, Sea Eagle, Nectarine Peach, Condor, and Pitmaston Orange Nectarine. The fruits of the latter variety were quite small. *E. Molyneux.*

HEAVY TOMATO FRUITS.—In the "Answers to Correspondents" column of the *Gardeners' Chronicle* for September 15, I observed a reply to "G. G." respecting heavy Tomato fruits, in which it was stated that Mr. Burgess grew a specimen weighing 1 lb. 10 ozs. In the year 1903 I grew a fruit which weighed 1 lb. 14 ozs., the variety being Daniels No. 1. In 1900 I had three specimens which weighed 1 lb. 6 ozs., 1 lb. 6½ ozs. and 1 lb. 7½ ozs. respectively, in one house containing the variety Fidlers Gem. This year I had a fruit which weighed 1 lb. 4 ozs., the variety being King Edward VII., the plant at the same time carrying 40 other fruits several of which weighed over 8 ozs. each. *Henry Rowles, 8, Minster Terrace, Partridge Green, Sussex.*

MYOPORUM ROSMARINIFOLIUM.—Some months ago I received in a consignment of plants one under the above name. I was unable to find any mention of it in the horticultural dictionaries or in the files of the gardening Press, and, on applying to the donor, was informed that he knew nothing about it except that it was an Australian plant. My little specimen, which was watered well on being planted, has been left rigidly alone since, but has done very well having made plentiful and strong growth. The curious part about this growth is that it is entirely prostrate and apparently has not the slightest inclination to assume a perpendicular position. The plant has about 30 shoots, the longest being 2 feet 6 inches in length. The leaves, which are deep green and corrugated, are 1¾ inches long and an eighth of an inch in breadth, and the shoots are studded with small five-petalled, white flowers a quarter of an inch across. These are very similar in form to those of Myoporum laetum, well known in the south-west, but the latter are spotted with purple. The most striking characteristic of M. laetum is its foliage, which is powdered with innumerable transparent dots, but there is no trace of transparency in the leaves of M. rosmarinifolium. If the latter should prove as hardy as M. laetum it will, with its prostrate habit, be a valuable plant for covering rockwork and banks, for it is quite pretty when in full flower. *S. W. Fitzherbert, Devonshire.*

IRIS TECTORUM.—The white form of Iris tectorum has hitherto been so rare that only this year an authority on the subject spoke of it to me as being probably a myth. The photograph (reproduced at fig. 90) taken from a plant which flowered with me in May last proves, however, that it has an objective existence. The flower is pure white

FIG. 90.—IRIS TECTORUM, WHITE VARIETY. (Reduced ¼.)

with the exception of faint golden markings on the claw and sides of the crest. The species is one of the comparatively few Irises in which the large standards spread out almost horizontally. It is doubtless quite hardy, but seems to require to be kept dry in winter. I have consequently grown it in a pot and wintered it in a cold greenhouse. I hope to have several flowers next year. *F. W. Stansfield, M.D., Reading.*

STRAWBERRIES IN SEPTEMBER.—As Mr. Bunyard in his instructive article on Strawberries, published in the last issue of the *Gardeners' Chronicle*, omitted to mention the so-called perpetual-bearing varieties, I am induced to send the Editor a few sprays of fruit of St. Antoine de Padoue, to show what the variety is capable of doing if treated as an autumn-bearing and not a perpetual-fruiting variety. To expect a good crop of fruit twice in a year is, in my opinion, unreasonable. Those, therefore, who have not given this variety a fair trial, I would advise to procure runners at once and plant them in good soil. Remove all flowers that appear next spring, rigorously picking off all runners also. Afford the roots water as often as they require it, and you may expect to obtain next September several useful dishes of fruit for dessert. In addition to what I now send the Editor I picked (two days ago) 1½ lb. of good fruit from 40 plants, besides several small "dishes," during the early part of the month. *W. Peters, Givon's Gardens, Leatherhead, September 16.*

[The berries are some of the largest and best we have seen of this variety, which was illustrated in these pages, October 18, 1902, p. 291.—ED.]

RAINFALL IN DEVONSHIRE.—The rainfall in these gardens for the three months ending August 31 was very slight, the total amount registered being 3·55.—June, 1·61; July, ·62; August, 1·32; the greatest amount for 24 hours being on June 29, when the gauge registered 1·2. Previous to the 13th of this month no rain has fallen for 18 days, or since August 25. Birds have caused much injury to fruits, partly, I think, owing to the weather having been so dry, and Wasps, which were very late in turning up this year, seem to be doing their best to make up for lost time. *Fred Leach, The Avenue Gardens, Brampford Speke, Exeter.*

RHODODENDRON BARBATUM.—The appearance of this beautiful species at the present season suggests the question whether it is carnivorous. The buds of next year's leaves and flowers exude an exceedingly viscid secretion, which hardens into varnish during the winter months, but just now is very clammy. Every untortunate fly which settles on one of these buds is doomed. The gummy exudation is quite enough to detain any insect up to the size of a common hover-fly, and the struggles of larger insects, such as blue-bottles, are further impeded by the stiff hairs on the footstalks of the leaves, whence the plant derives its specific name. These all point inwards round the bud, forming an effective *chevaux de frise* against escape. I was looking to-day at a specimen of the bearded Rhododendron, about 10 feet high, in my garden, which must have several hundreds of clammy buds, each one of which has captured from five to ten flies of different kinds. The question is, can the plant assimilate nourishment from its victims? *Herbert Maxwell, Monreith, September 18.*

SOCIETIES.

ROYAL HORTICULTURAL.

TRIAL OF DAHLIAS AT WISLEY.

SEPTEMBER 14.—A deputation from the Floral Committee visited the Society's gardens at Wisley on the above date to inspect the trials of Cactus Dahlias. The deputation judged the varieties chiefly from the standpoint of garden decoration, but nevertheless was careful in refusing to make an award even to an erect flowering variety if the flowers were not of a type that could be properly described as good Cactus form. Notwithstanding all that has been said and written on the importance of obtaining better habited Cactus Dahlias, the trial served to show that in the best exhibition type but little improvement can be found in the habit of the plants. The flower stalks are still too short and too slender, whilst in many instances the stalk bends back again, almost like a pot-hook, thus causing the flowers to droop and turn their face to the earth. The Committee, in awarding three points to the Cactus varieties, keeps the standard as high as the present conditions will allow, but would gladly raise it if it were practicable to do so. An Award of Merit is usually intended to mark a Dahlia as a good exhibition flower, but three x x x indicate that it is of decorative value in the garden. Some varieties have obtained both awards, as Floradora, and others. On the occasion under notice three x x x were awarded to those following:—

A. D. Stoop.—A rosy crimson flower of good Cactus form, and flower stalks that hold the blooms well above the foliage.

Mont Blanc.—Recognised chiefly for its late flowering habit, but it does not possess equal merit to that of the variety "Fairy."

Pink Pearl.—The flowers of this variety are of a charming shade of mauve.

Prince of Yellows.—A very commendable yellow variety for the garden, but scarcely so good as Mrs. J. S. Brunton for exhibition purposes.

Reggie.—This was the best magenta crimson flower in the trials, but there is room left for improvement.

West Hall Scarlet.—A good garden variety raised at Byfleet.

Salvia splendens "*Zurich*."—This variety of Salvia is exceedingly dwarf, and, planted out in the open, was very freely flowered.

It was decided to recommend the full Committee on Tuesday next to grant an Award of Merit to Cactus Dahlia H. F. Robertson, as the deputation was impressed with the quality of its flowers, but could not recommend it for garden decoration.

NATIONAL ROSE.

SEPTEMBER 19.—The autumn exhibition of this society was held on Wednesday last in the Royal Horticultural Hall, Westminster. A very pretty display was seen, although the exhibition was not quite so good as in some former years, owing to the dry summer, which hastened the development of the blooms, so that in many cases southern growers were unable to compete. The more northern growers and those in Ireland, who have been favoured with a greater rainfall, showed by far the better blooms. Outstanding varieties were Maman Cochet and Frau Karl Druschki.

NURSERYMEN'S CLASSES.

The class for 36 blooms in distinct varieties was contested by seven growers. The winning collection, shown by Messrs. J. COCKER & SONS, Aberdeen, was a very fine exhibit, the blooms being large, and with beautifully-developed colours. As was to be expected at this late season, some of the outer petals bore traces of injury, otherwise they were in perfect condition. A selection of the best blooms include Caroline Testout, Mrs. J. Laing, Frau Karl Druschki, Bessie Brown, Captain Hayward, Hugh Dickson, S. M. Rodocanachi, Mad. Wagram, Annie Wood, Horace Vernet, and Marie Baumann. The example of Mrs. J. Laing was awarded the Silver Medal for the best Rose other than a Hybrid Tea, Tea, or Noisette variety exhibited in the nurserymen's classes. 2nd, Mr. HUGH DICKSON, Royal Nurseries, Belfast, for a very bright lot, but they were rather smaller than those of the 1st prize collection. Hugh Dickson, J. B. Clark, Ulrich Brunner, Comte de Raimbaud, John Stuart Mills, and Mad. Joseph Combet were the more notable examples, the last-named being awarded the Silver Medal offered for the best Hybrid Tea Rose exhibited by a nurseryman. 3rd, Messrs. ALEX. DICKSON & SONS, Newtownwards, Co. Down.

A class was also provided for 36 blooms in distinct varieties in trusses of not fewer than three blooms of each variety. The exhibits were limited to an area of 8 feet by 5 feet. This was a very pretty class, but only two growers staged, Mr. JOHN CROSSLING, Penarth Nurseries, South Wales, and Messrs. G. PAUL & SON, the Old Nurseries, Chesbunt, who won in the order named. The premier collection contained good examples of White Maman Cochet, Marie Van Houtte, Mad. Lambart, and others.

TEAS & NOISETTES.

There were five good displays seen in the class for 18 blooms in distinct varieties, the 1st prize being awarded to Messrs. ADAM & CRAIGMILE, Fernielea, Rubislaw, Aberdeen. The blooms were small, but very refined. Among the flowers was a glorious example of Maman Cochet, which was awarded the Silver Medal offered for the best Tea or Noisette Rose in the nurserymen's section. A bloom of White Maman Cochet was almost as good. 2nd, Messrs. D. & W. CROLL, Dundee, for a collection of light-coloured varieties. Maman Cochet was again shown well in this collection.

Class 4, for 12 distinct varieties of Roses, seven blooms of each variety, was a charming one, the 1st prize collection of Mr. HUGH DICKSON, Belfast, being magnificent. He had Frau Karl Druschki, Mrs. John Laing, Hugh Dickson, and Ulrich Brunner in splendid form. Mr. DICKSON quite out-distanced all other exhibitors in this class. 2nd, Messrs. JAMES COCKER & SONS, Aberdeen.

Mr. DICKSON was also 1st in the class for 12 blooms shown in a single vase, his variety being J. B. Clark.

DECORATIVE ROSES were poorly represented. No exhibits were forthcoming in a class for 24 varieties, and only one was staged in a smaller class for 12 varieties. This exhibit, however, was remarkably good. It was shown by Messrs. W. & R. FERGUSON, Brucefield, Dunfermline, and included good vases of Killarney, Mad. Abel Chatenay, and Liberty. Two growers only showed in a class for Decorative Roses arranged in fancy bamboo stands—Mr. JOHN MATTOCK, New Headington, Oxford, and Mr. GEO. PRINCE, Oxford—and these growers were awarded the 1st and 2nd prizes in the order named. Mr. MATTOCK had Bardou Job, Paul's Single White, Mad. Antoine Mari, Longworth Rambler, &c.

GROUPS OF ROSES.

Class 10 was for a group of Roses arranged on the floor. One exhibit only was staged, that of Messrs. GEO. PAUL & SON, Cheshunt.

A class was also provided for a group of cut Roses arranged on a staging and occupying an area not exceeding 100 square feet. This brought three good displays, the winning collection being the finest group in the hall. It was put up by Mr. GEO. PRINCE, Oxford, and embraced most of the better-known varieties. Prominent in the centre of the display were many choice blooms of Frau Karl Druschki, while Maman Cochet was also well shown. 2nd, Messrs. G. JACKMAN & SON, Woking.

Rose Fruits.—A new class was provided for the "hips" of nine distinct species or varieties of Rose with their foliage. They were required to be shown in vases. The 1st prize was a piece of Plate presented by the President, C. E. Shea, Esq. We were rather disappointed with the result, although four displays were presented; perhaps it is too early for these to be coloured their best. Mr. JOHN MATTOCK, Oxford, had the heaviest berried branches, and he was awarded the 1st prize—R. rugosa, R. rubrifolia (very handsome), R. canina, Sweet Briar, &c. 2nd, Messrs. G. PAUL & SON, Cheshunt, Herts.

AMATEURS' CLASSES.

Eighteen Blooms in distinct varieties.—Three growers competed, the premier position being won by the Rev. J. H. PEMBERTON, Haveringatte-Bower, Essex. The blooms were not up to the standard of former years, although several were of merit, notably Bessie Brown, White Maman Cochet, Comte de Raimbaud, and others. The 2nd prize exhibit, shown by W. BOYES, Esq., 30, Duffield Road, Derby, contained the medal flower for the best Rose other than a Tea, Hybrid Tea, or Noisette variety in Victor Hugo, a magnificently-coloured flower.

Twelve Blooms in distinct varieties.—E. M. EVERSFIELD, Esq., Deane Park, Horsham, was easily 1st among two. His example of Maman Cochet was a very fine flower.

Six Blooms in distinct varieties.—The winning exhibit contained a half-dozen remarkably fine flowers that surpassed any seen in the foregoing amateur classes. They were so good, we give the names: Mildred Grant, A. K. Williams, Chas. Grahame, Frau Karl Druschki, Maréchal Niel, and Tom Wood. The exhibitor was W. SPENCER CHAPMAN, Esq., The Cottage, The March, Warminster, Wilts. The example of A. K. Williams was very beautiful.

A pretty display of Roses in vases was shown by the Rev. J. H. PEMBERTON, in the class for twelve distinct varieties, in trusses of three flowers.

TEA AND NOISETTE ROSES.

E. M. EVERSFIELD, Esq., Deane Park, Horsham, showed the best dozen blooms, distinct, among three. Great difference was seen in the flowers, some being of high quality, for example Maman Cochet, which was awarded the Silver Medal for the best flower of this type in the amateurs' section, while others were but mediocre. 2nd, Rev. F. R. BURNSIDE, Great Stambridge Rectory, Essex; both Maman and White Maman Cochet were shown well in this group. The smaller class for nine blooms saw H. ADAMSON, Esq., South End, Bedale, placed 1st, and he was followed by C. F. H. LESLIE, Esq., Hertingfordbury, Herts.

Stronger competition was seen in the class for six blooms, the prize being awarded W. SPENCER CHAPMAN, Esq., Warminster, for a very fine half-dozen flowers.

GOLD MEDAL FLOWERS.

Dorothy Page Roberts.—This is a H.T. variety of a charming shade of colour, and with beautiful petals. The colour is rose-pink suffused with apricot. Some of the older blooms showed an open centre, and these appeared like glorified Austrian Briars. Shown by Messrs. ALEX DICKSON & SONS.

Mrs. Stewart Clarke, H.T.—This variety is the result of a cross between Rubens and Tom Wood. It is a large flower, with plenty of centre petals. The colour is cerise-pink.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 17.—On Monday evening last the Executive Committee held a meeting at Carr's Restaurant, Strand, when Mr. J. H. Witty presided.

After reading the minutes of the previous meeting, the new secretary (Mr. R. A. Witty) reported that the annual outing took the form of a trip to Deepdene and Broomhill, and was well attended.

A rough financial statement was presented, showing a working balance in hand, which it is hoped will shortly be materially increased by the receipt of members' subscriptions and other items falling due. It was arranged that the annual dinner be held as usual at the Holborn Restaurant, on November 27, when it is hoped that the President will preside.

The question of a Dean Memorial Medal was then discussed, and it was resolved that a design be procured, with all necessary particulars as to size, cost, &c.

Mr. C. H. Curtis presented the report of the Publication Sub-Committee, in which it was specially mentioned that it was desirable for the Society to issue publications likely to interest those members of the National Chrysanthemum Society living at a distance. After some discussion it was resolved that a publication in the form of an *Annual* shall be prepared for gratuitous distribution among the members, and that the same shall be ready early in the ensuing year. Judges were nominated to make awards to miscellaneous exhibits at the forthcoming shows.

Sixteen new members and Fellows were elected.

——At the meeting of the Floral Committee held on the same day Mr. D. B. Crane was re-elected chairman of this committee for the ensuing year.

First-Class Certificates were awarded to the following varieties:—"Ethel" (sport from Pabbie Burns), Messrs. WELLS & Co., Merstham; "Mrs. Arthur Beech," White Countess and Mercedes, all seedlings, shown by Messrs. LOWE & SHAWYER.

LONDON DAHLIA UNION.

SEPTEMBER 18, 19.—The London Dahlia Union held its annual exhibition on these dates in the Royal Botanic Gardens, Regent's Park. The exhibits were accommodated in the large conservatory and the corridor. The number of entries exceeded the average for the Union's shows, and most of the noted growers of these flowers competed in the various classes.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, won in the principal open class for show Dahlias, that for 24 blooms in distinct varieties, and Mr. SIDNEY HOOPER, The Hamlet, Chippenham, had the best of these flowers in the amateur's section.

The best 12 varieties of Cactus Dahlias, in bunches of six flowers, in a class open to all, were shown by Messrs. J. STREDWICK & SON, Silverhill Nurseries, St. Leonards-on-Sea, who showed a charming collection, principally of new varieties.

The open class for 24 blooms of Cactus Dahlias in distinct varieties, to be shown on boards, was an important one. The 1st prize was secured by Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, for a very fine display.

Two Gold Medals were offered by the Union to perpetuate the name of Mr. Richard Dean, its late secretary and founder, one in the trade, and the other in the amateurs' classes respectively. Messrs. BURRELL's exhibit of 24 Cactus blooms was adjudged the best group and was accordingly awarded one of the medals. The examples of Pearl, Nelson, Harbour Lights, and Premier, were of high merit.

In the class for 12 varieties of Pompon Dahlias in bunches of 10 flowers of each variety four good displays were seen. The 1st prize was awarded to Mr. M. V. SEALE, Sevenoaks. The examples of Little Mary and Thalia were remarkably good. The best "single" Dahlias were shown by Messrs. J. CHEAL & SONS, Crawley, Sussex, who had Columbine, Miss Roberts (yellow), Victoria, Eclipse, and others in good form.

The principal prize in the amateurs' classes was that of the Hobbies Challenge Cup. This was

offered for nine varieties of Cactus Dahlias in bunches of three blooms. Good competition obtained, the number of entries totalling seven. The trophy, which carried with it a monetary prize, was secured by Admiral Sir L. BEAUMONT, K.C.B., Baldslow, Sevenoaks (gr. Mr. W. E. Peters). The flowers were of exceptional quality, and they were awarded the other "Dean" Memorial Medal.

A strongly-contested class was that for 12 blooms of Cactus Dahlias open to amateurs. L. MCKENNA, Esq., Honeys, Waltham St. Lawrence, Twyford, Berks, had the best dozen flowers among ten competitors.

NON-COMPETITIVE EXHIBITS.

Displays of Dahlias were shown by HOBBIES, LTD., Dereham Nurseries, Norfolk; Messrs. WAKE, LTD., Feltham; Mr. J. T. WEST, Tower Hill, Brentwood; Mr. J. E. KNIGHT, Tettenhall Nurseries, Wolverhampton; and Messrs. H. CORTIS & SON, Groenekan, Utrecht, Holland. Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, showed Dahlias and a fine display of Gladioli; Messrs. J. PEED & SON, West Norwood, staged flowers of tuberous-rooting Begonias; Mr. ERIC F. SUCH, Maidenhead, put up a mixed group consisting of Dahlias, Chrysanthemums, and border flowers.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

SEPTEMBER 10.—The usual monthly meeting was held on this date, Mr. Chas. H. Curtis in the chair. Two new members were elected, making 72 this year up to the present date. Eleven members were reported on the sick fund. The amount paid for sickness is £93 less this year than at the corresponding date last year, notwithstanding that the chronic sick members are now paid from the benefit instead of from the benevolent fund. Members over 60 years of age may now, under the new rules (rule 18), withdraw twice the amount of interest on their balance of last year, thus enabling them to pay their contributions with ease. The annual dinner will be held at the Holborn Restaurant, on Tuesday, October 9 next, at 6.30 p.m., when J. Gurney Fowler, Esq., will preside.

GARDENERS' DEBATING SOCIETIES.

BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL.—The first meeting of the new session of this society was held on September 12, the president, Mr. W. Roupell, occupying the chair. A lecture, entitled "A Visit to the Canary Islands," illustrated by lantern slides, was given by Mr. T. Ernest Waltham, F.R.H.S. The views were extremely good, and depicted the habits and surroundings of the people. Mr. Waltham also showed a collection of photos of Orchids and other flowers taken in their natural colours. The attendance of the members was satisfactory. The society has decided to extend the means for the mutual improvement of its members, and the committee has arranged to hold meetings every second Wednesday in each month during the season. The advantages are not confined to members.

THE HARDY FLOWER BORDER.

LILIUM AURATUM VAR. PLATYPHYLLUM

This is a most handsome Lily and one which up to the present time appears to be immune from the dreaded disease which often attacks plants of the type. It has a stronger and more vigorous constitution than the older form, the foliage being larger and of greater substance. The flowers are also of a very large size, and when they are fully expanded on a vigorous, well-grown plant, measure 12 and often 15 inches across. The form known as virginale has the same sturdy habit as the above, from which it only varies in the colour of its flower. The flower of L. a. platyphyllum are evenly and richly spotted with crimson, but not quite so prominent as in L. auratum. In the variety virginale a deep golden band runs through the centre of each petal, which is also slightly spotted with yellow, and in some cases with light crimson. The large, dark-coloured anthers form an additional attraction, and as many as 12 to 15 flowers are borne on stems 4 to 5 feet high; the scent is equal to if not stronger than that of L. auratum. A group of these plants presents a bold effect in the flower garden.—*W. H. Clark, Aston Rowant, Oxon.*

Obituary.

HARRY TURNER, V.M.H.—Mr Harry Turner, of the Royal Nurseries, Slough, died at his residence, at Langley, on Friday morning, September 14, at 2.30. He had not had the best of health for some time past, although he was well enough to go to Woodstock to judge at a horticultural show on the previous Tuesday. On his return from this show deceased was seized with an attack of hemorrhage, and towards the following day became unconscious.

THE LATE HARRY TURNER, V.M.H.

Mr. Harry Turner was a keen florist, and took over the management of the Carnations and Auriculas on the death of his father in 1885. His brother Arthur, who was a joint and equal partner with him, managed the Roses and some of the other departments. I do not think that Harry Turner missed a single exhibition held by the National Carnation and Picotee Society, or National Auricula Society during the 21 years since the death of his father. He was an expert judge at flower and fruit shows, and had a keen appreciation for everything connected with a country life, being fond of animals and birds. He was also an excellent musician. It was well that he died in harness, as it were, being engaged serving the public shortly before he passed away. We shall miss him sadly, as we missed his father 21 years ago. The firm of Charles Turner has been represented at the London exhibitions for more than 60 years, and those of us who can remember the great exhibitions at Regent's Park and Crystal Palace will never forget the magnificent specimens of Roses, Azaleas, Show and Fancy Pelargoniums, &c., that came from Slough, and in this connection we must not forget that faithful servant of the firm, John Ball, who attended to the show Tulips, Carnations, and Auriculas during very nearly the entire period of the firm's existence. He is still happily with us, but is not able to do much, being, I think, in his 78th year. It is known to most of Mr. Turner's friends that his wife died in July, 1905, and deceased has left a family consisting of three boys and two girls. He was buried at Langley at 3.15 on Tuesday last.—*J. Douglas.*

ANDREW HENDERSON.—The death of Mr Andrew Henderson occurred in Florida, U.S.A., on August 31, at the age of 83 years, in the presence of Mrs Henderson. Deceased was a member of the firm of E. G. Henderson & Son, of the old Wellington Nursery, St. John's Wood, London, now incorporated in Lord's Cricket Ground. This business was for some time one of the most flourishing nursery and seed establishments in the country, many new plants being distributed from it, and all classes of plants from herbaceous perennials to Orchids, Economic plants, and florists' flowers being grown with success. On the death of the late Edward George Henderson, his son, Mr. Andrew Henderson, continued the business, who subsequently took over the Pineapple Nursery, Maida Vale (now built upon), and carried on both establishments until the Wellington Nursery passed out of his hands. Messrs. E. G. Henderson & Son's business was a good example of the old-fashioned nursery, its stock, which partook greatly of the botanical garden, being of the most varied character. But the fashion in gardening altered, and the buyers of collections of plants became imbued with the idea of growing batches of decorative plants, and the demand for odd plants from the carefully compiled catalogue, and for stove and greenhouse plants, became less and less. Finally, the business was wound up, and some 16 years ago Mr. Henderson went to Florida with the intention of growing Pine Apples for market. A succession of cold winters rendered his project inadvisable, and he turned his attention to forcing Lily of the Valley and other flowers for sale, continuing the business with a moderate degree of success until his death. He had a great knowledge of plants, and in the flourishing days of the Wellington Nursery, sent out many new ones. He had the monopoly of the tri-coloured Pelargoniums of that day, raised by Mr. Peter Grieve, and many other plants which were then remarkable. The late Mr. Henderson was of a retiring disposition, and never took that place among his fellow-horticulturists which his knowledge and position entitled him to take, and to that fact, perhaps, more than any other, may be attributed the decline of the once famous business. He was, however, very pleasant with those with whom he had to do, and had many good qualities.

OTTO FROEBEL.—We reproduce a photograph of Otto Froebel, whose death on August 28 last, at the age of 62, has been announced. Deceased was a nurseryman, having a business at Zurich,

THE LATE OTTO FROEBEL.

and was well known for the success he obtained in the raising of choice, cross-bred varieties of Begonias, hardy Water Lilies and Anthuriums.

FREDERICK STREET.—We regret to record the death of this nurseryman which occurred on Wednesday the 12th inst., at the age of 71. Deceased was a well known cultivator of Rhododendrons, Conifers, and hardy trees and shrubs, and in addition was a vendor of peat.

MARKETS.

COVENT GARDEN, September 19.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Asters, p. dz. bchs.	1 6– 2 6
Callæthiopica, per dozen	2 6– 4 0
Centaurea cyanus, doz. bunches..	1 0– 2 0
— suaveolens ...	3 0– 4 0
Coreopsis grandiflora, per doz. bunches ...	1 6 2 0
Carnations, per dozen blooms, best American various ...	1 6– 3 0
— smaller, per doz. bunches	1 0– 2 6
— Malmaisons ...	3 0– 8 0
Cattleyas, per doz. blooms ...	9 0–12 0
Chrysanthemums, per dz. blooms	1 0– 2 6
— small blooms, per doz. bnchs.	3 0– 6 0
Eucharis grandiflora, per doz. blooms... ...	2 0– 3 0
Gardenias, per doz. blooms... ...	1 0– 1 6
Gladiolus, various, per dz. bnchs..	9 0–12 0
— The Bride ...	3 0– 4 0
— brenchleyensis, per doz. spikes	1 0– 2 0
Gypsophila elegans, per doz. bunches	2 0– 3 0
— paniculata	2 6– 4 0
Gaillardias ...	2 0– 3 0
Heather, white, pr. doz. bunches...	3 0– 6 0
— purple... ...	2 0– 3 0
Lilac, white, per bunch	2 0– 3 0
Lilium auratum ...	2 0– 3 0
— candidum, per bunch	1 6– 2 0
— lancifolium, rubrum and album	1 6– 2 0
— tigrinum, per bunch .. .	1 6– 2 0
— longiflorum	1 6– 2 6
Lily of the Valley, p. dz. bunches	6 0– 9 0
— extra quality ...	9 0–12 0
Marguerites, white, p. dz. bunches	2 0– 3 0
— yellow, per dz. bunches ...	2 0– 3 0
Mignonette, per dz. bunches ...	2 0– 3 0
Montbretia, dozen	2 0– 3 0
Odontoglossum crispum, per dozen blooms	2 6– 3 0
Pancratiums, doz. fls	2 0– 3 0
Pelargoniums, show, per doz. bunches ..	3 0– 5 0
— Zonal, double scarlet.... .	3 0– 4 0
Pyrethrums, dozen bunches	1 6– 2 6
Roses, 12 blooms, Niphetos .	1 0– 2 0
— Bridesmaid	1 3– 1 6
— Kaiserin A. Victoria .	1 0– 2 0
— Caroline Testout	1 0– 2 0
— C. Mermet ...	1 0– 1 8
— General Jacqueminot	1 0– 1 6
— mibunches, per dozen	3 0– 5 0
— Liberty .	1 0– 2 0
— Mad. Chatenay	1 0– 2 6
— Mrs. J. Laing	1 0– 2 6
— from the open, various kinds, per doz. bnchs.	2 0– 5 0
Scabiosa, per doz. bunches ..	2 0– 3 0
Statice, per dozen bunches ..	1 0– 6 0
Stephanotis, per dozen trusses	3 0– 5 0
Stocks (double white) per doz. bunches ...	2 0 4 0
Sweet Peas, per doz. bunches	2 0 4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, per doz.	5 0 10 0
— — medium, bunch ..	1 6– 2 0
— —short sprays per bunch	0 6– 0 9
— Sprengeri ..	0 6 1 0
Adiantum cuneatum, doz. bun.	4 0– 6 0
Berberis, p. bunch	2 6– 3 0
Croton leaves, per bunch	1 0– 1 6
Cycas leaves, each	1 6– 2 0
Fern, English, p. dozen bunches	0 9– 1 6
Fern (French), doz. bunches	2 0– 5 0
Hardy foliage (various), per dozen bunches	2 0– 3 0
Hardy Grasses, per doz. bunches.	2 0 3 0
Ivy-leaves, bronze	1 6– 2 0
— long trails per bundle ...	1 0– 2 0
— short green, doz. bunches...	2 0– 3 0
Moss, per gross ...	1 0– 5 0
Myrtle, per dozen bunches ..	2 0– 5 0
Smilax, p. dz. trails	2 0– 5 0

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

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0– 8 0
Aralia Sieboldi, per dozen ...	4 0– 6 0
— larger	9 0–12 0
Araucaria excelsa, per dozen ...	12 0–30 0
Aspidistras, green, per dozen ...	18 0–30 0
— variegated, per dozen	30 0–42 0
Asparagus plumosus nanus, doz	6 0– 9
— Sprengeri, doz.	6 0– 8 0
— tenuissimus per dozen ...	8 0–10 0
Asters, per dozen	3 0– 6 0
Bouvardias, per dozen	6 0– 8 0
Campanula isophylla alba, per dozen ...	4 0– 6 0
— Mayi	1 0– 6 0
Chrysanthemums, best	12 0–24 0
— smaller ...	5 0– 8 0
— segetum .	3 0– 6 0
Clematis, per doz.	8 0– 9 0
— in flower ...	12 0–18 0
Cocos Weddelliana, per dozen	9 0–18 0
Coleus	3 0– 5 0
Coreopsis .. .	4 0– 6 0
Crotons, per dozen	12 0–30 0
Cyperus alternifolius, dozen ...	4 0– 5 0
— laxus, per doz	4 0– 5 0
Dracænas, per doz.	9 0–24 0
Ericæ gracilis, p. dz.	12 0–18 0
— nivalis	18 0 24 0
Euonymus, per dz.	4 0– 9 0
Ferns, in thumbs, per 100... ...	7 0–10 0
— in small and large 60's ...	16 0–25 0
— in 48's, per dozen	4 0–10 0
— in 32's, per dozen	10 0 18 0
Ficus elastica, per dozen	9 0–18 0
— repens, per doz.	4 0– 6 0
Fuchsias, per doz.	4 0– 6 0
Hydrangea paniculata, per dozen	9 0–12 0
Kentia Belmoreana, per dozen	12 0–18 0
— Forsteriana, per dozen ...	12 0–21 0
Latania borbonica, per dozen ...	12 0 18 0
Lilium auratum .	18 0–24 0
longiflorum, per dozen ..	12 0–18 0
— lancifolium, per dozen ...	18 0 24 0
Lily of the Valley, per dozen ...	18 0–30 0

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

	s.d. s.d.
Marguerites, white, per dozen ...	4 0– 8 0
Pelargoniums (Zonals), p. dz.	3 0– 5 0
— Ivy-leaved, per dozen	5 0 8 0
Rhodanthe, per dz	3 0– 5 0
Roses, per dozen ..	12 0 18 0
Selaginella, dozen	4 0– 6 0
Solanums, per doz.	8 0–12 0
Solanum capsicastrum, per doz.	8 0–12 0
Spiræa japonica, per dozen ...	6 0–10 0
Verbena Miss Willmott, per doz..	4 0– 6 0

Fruit Average Wholesale Prices.

	s.d. s.d.
Apples (English), ½ sieve...	1 6– 3 6
— English, per bushel	3 0 5 0
Bananas, bunch:	
— No. 1 quality. .	6 6 7 6
— No. 2 quality .	5 6 6 6
— Extra quality ..	8 0 8 6
— Giants, p. bch.	9 6 10 6
— Jamaica	4 6 6 0
— Loose, per dz.	0 8 1 3
Blackberries, peck	3 0
Damsons, ½ sieve	5 6 6 0
Figs, per dozen ..	1 3 1 6
— Italian, box .	0 10 1 3
Granadillas, dozen	2 0 2 6
Grape Fruit, case	16 0 18 0
Grapes (English), Ahwick Seedling, per lb. .	0 10 1 0
— Madresfield Court, per lb. .	1 0 1 3
— Muscat, per lb.	1 0 1 3
— Black Hambro, per lb. ...	0 6 1 0
— Alicante, p. lb.	0 8 0 10
— Gros Colmar, per lb. ...	0 10– 1 6
— Muscat, per lb.	0 10– 2 6
— Lisbon, case .	6 0 9 6
Lemons :	
— Messina, case	25 0 30 0
— Naples, p. case	35 0 60 0
Lychees, per box	1 0 1 2
Melons, each	0 9 1 6
Melons (Valencia), per case: ...	6 6– 9 6
— Rock	2 0– 3 6
Nuts, Cobnuts, per doz. lb. .. .	1 6 5 0
— Brazils, new, per cwt. ..	45 0
— Barcelona, per bag	21 6
— Walnuts, per dozen lb. ...	5 6
— Cocoa nuts, 100	10 6–13 6
Oranges, per case :	
— Jamaica .	13 0–16 6
Peaches (English), per dozen ...	4 0–12 0
— French, boxes	1 0– 2 0
Pears (English), ½ sieve	1 6 4 0
— English, bushel	3 0– 8 0
— American, barrels ...	28 0 35 0
— French, Williams, boxes .	3 6 4 6
— French, Williams, crates .	7 0 9 6
— Californian, per case	7 0 10 0
Pineapples, each	1 6 3 0
Plums (English), ½ sieve...	4 0 8 0
— French, box	0 8– 1 3
— French, ½ sieve	3 0
— Californian, boxes .	8 0 11 6

Vegetables : Average Wholesale Prices.

	s.d. d.
Artichokes (French), per dozen ...	2 3
Aubergines, per dz.	2 0
Beans, home-grown, p. bus.	3 0 4 0
Beetroot, bushel .	1 6
Cabbages, per mat	4 0
— red, per dozen	2 0
Carrots, French-pad	3 0
— per bag, unwashed	2 0
— washed	3 0
Cauliflowers, per tally ...	6 0
Chow Chow, p. dz	1 6 2 0
Cucumbers, p. flat, 2½ dozen ...	7 0
— 3 dozen, small	5 0 6 0
— per dozen	2 6 3 0
Endive, per dozen	1 6 1 9
Horseradish, foreign, per dozen bundles	18 0 24 0
Indian Corn, dozen	1 0 1 6
Leeks, 12 bundles	2 6
Lettuces, Cos, per dozen ...	0 9 1 0
— French, per dz	1 3 1 6
Marrows, per tally	5 0
Mint, per dozen	3 0
Mushrooms house per lb. ...	1 0 1 6
— Buttons, per lb	1 0 1 6
Mustard and Cress, per dozen pun	1 0 1 6
Onions (Valencia), case .. .	6 6
— Egyptian, bag .	4 0
— pickling, per bushel ..	3 6
— French, ½ bag	2 6
Parsley, 12 bunche	1 0 2 0
— ½ bushel	1 0 2 0
Parsley, per dozen bundles	4 0 —
Tomatos : —	
— English, per 12 lbs. ..	1 6 2 3
— small, selected per 12 lbs	1 6 2 0
— seconds, per 12 lbs.	0 9 1 0
— outdoor, per 12 lbs...	1 6 1 9
— French, per crate ...	2 3 2 6
Turnips, per cwt.	3 0
— bags ..	3 0
Watercress, per doz. bunches	0 4– 0 6

REMARKS.—English and French Tomatos are likely to be firm in prices owing to the wet weather. Good Madresfield Court and Gros Maroc Grapes meet with little demand and can be bought at 1s. per pound. Good dry Blackberries suitable for making jam can be purchased at 3s. per peck. Others can be bought at 2s. 6d., but the fruit is rather wet. Prices for large English Peaches are firm. Medium-sized fruits are rather scarce. Damsons are very dear and scarce owing to a short crop. English Plums are also seen in very limited quantities. Trade generally is fairly good. *E. H. Rubs, Covent Garden, Wednesday, September 19, 1906.*

POTATOS.

Large supplies of Potatos are still coming from all districts, and trade is very dull. Lincolns, 55s. to 65s.; Bedfords, 60s.; Kents, 70s. to 80s.; Blacklands, 50s. to 60s. *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

A very slight improvement in trade is seen. Chrysanthemums sell fairly readily, except the inferior plants of which there are large quantities. These are difficult to sell at 4s. per dozen. Erica gracilis is good, also the variety nivalis, but I find the variety gracilis alba has quite a pink shade. Small plants of this latter variety sell well. Asters are still plentiful and some are of very good quality. Among Zonal Pelargoniums the best are Mrs. Lawrence, Berthe de Presilly, and Raspail. Spiræa japonica and white Lilies from retarded plants are both good. Rose Madame Levavasseur, although well-flowered, does not sell readily. Liliums in pots vary; some are good, others are of indifferent quality. Bouvardias are now plentiful. There are large supplies of Ferns, Palms, and other foliage plants. Codiæums (Crotons) are good. Compact plants of Physalis Francheti realise from 18s. to 42s. per dozen, and a few of extra quality 5s. each. Solanums are very good; some are sold for good prices, but it is too early in the season for their sale in large quantities. Hardy shrubs are already seen, also Ivies, Ampelopsis, Clematis, and other climbers.

Cut Flowers.

Chrysanthemums are now seen in large quantities. The varieties White Countess, Mercedes (yellow), and Mrs. A. Beech (bronze), which received Certificates from the National Chrysanthemum Society on Monday last, the 17th, are marketed by Mr. J. Lowe, of Uxbridge, and the same grower has Princess, a good pink flower. I may mention that Clara, golden yellow, and Ethel, a primrose sport from Rabbie Burns, are promising varieties, although not yet seen in the market. The last-named gained a First Class Certificate, and Clara was commended. These came from Messrs. Wells & Co., who also had some pretty varieties of a new type of singles. Asters are still plentiful, and Dahlias are also seen in large quantities. Roses do not improve greatly in quality, but those that are sold fetch rather better values. Prices for Carnations are also advancing a little. Liliums and Lily of the Valley are still plentiful. Not so many Gladioli are seen, while Sweet Peas are almost finished for the season. Gaillardias, Coreopsis, Michaelmas Daisies, and other hardy flowers are to be had in large quantities. Gypsophila paniculata is now nearly over, but G. elegans and several varieties of Statice are plentiful. Physalis Francheti is seen in large heaps. Hardy foliage with autumnal tints is significant of the approach of winter. *A. H., Covent Garden, Wednesday, September 19, 1906.*

CATALOGUES RECEIVED.

D. PRIOR & SONS, Colchester Roses.

JOHN CHARLTON, 35 & 37, The Pantiles, Tunbridge Wells—Bulbs.

H. CANNELL & SONS, Swanley Fruit trees, Plants, and general list.

THOS. S. WARE, LTD., Feltham, Middlesex Bulbs, Hardy Plants, Roses, Carnations, &c.

L. R. RUSSELL & SONS, Chilwell Nurseries, Lowdham Hardy Fruits and Roses.

J. SMITH, Daisy Hill Nursery, Newry, Ireland Bulbs, also Hardy Plants, Alpines, Ferns, Aquatics, &c.

HAKELEY & SUGDEN, Ltd., Halifax Boilers and Heating Appliances.

PHILADELPHIA LAWN MOWER CO., H 16, Scruttons Street, Finsbury, London, E.C. Lawn Mowers.

WILLIAM HEINEMANN, Publisher, 21, Bedford Street, London, W.C. New Books.

FOREIGN.

L. SPÄTH, Baumschulenweg, b. Berlin Fruit Trees, Plants, Trees, &c.

HAGER & SCHMIDT, Erfurt, Germany Novelties in Seed.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending September 15, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS

The *weather*, after being fine and bright at the commencement of the week, gradually fell into a very showery and changeable condition over the whole kingdom. The falls of rain were, however, mostly slight, and there were frequent intervals of sunshine. Thunderstorms were experienced at Swarraton and Dungeness on Saturday, lightning was seen at several other southern stations, and thunder occurred at Holyhead.

The *temperature* was a little above the average in Scotland, the eastern section of England, and in the Channel Islands, in Ireland and the south-west of England it was slightly below, and in the north-west of England in exact agreement with the normal. The highest of the maxima were generally recorded either on Sunday or about the middle of the week, and ranged from 74° in England S. and the Channel Islands, and 73° in England E., to 67° in Scotland N. and to 66° in Ireland N. The absolute minima, registered at most stations on Tuesday, were much lower than of late. In England S.W. (at Llangammarch Wells) the thermometer fell to 32°, and in the Midland Counties to 34°, while in the other districts the readings ranged from 35° in Scotland E., England E., and Ireland N., to 40 in Scotland N. and to 51° in the Channel Islands. Frost was experienced on the ground in many parts of England on Tuesday.

The *rainfall* exceeded the average over the kingdom generally, but was rather deficient in Scotland E., England N.E. and Ireland S., and very slightly in the Channel Islands.

The *bright sunshine* was above the normal in all districts. It exceeded 50 per cent. of the possible amount over the greater part of the kingdom, being as much as 59 per cent. in the Channel Islands. The lowest percentage was 39 in Scotland N.

THE WEATHER IN WEST HERTS.

Welcome rains.—There occurred one cold day when the highest reading in the thermometer screen never exceeded 56°, but throughout the rest of the week the weather remained warm. The ground temperatures have fallen rather rapidly, the reading at both 1 and 2 feet deep being at the present time only about seasonable. Rain fell on six days during the week, and to the total depth of nearly 1¼ inches, making this the wettest week experienced here since the record rainfall at the end of June. Of this amount, which is equivalent to a watering of 5½ gallons on each square yard, about 1 gallon has passed through the bare soil percolation gauge. This gauge had previously been perfectly dry for seven weeks. The sun shone on an average for 5¼ hours a day, or for half-an-hour a day in excess of a seasonable duration. The winds were, as a rule, rather high, but in no hour did the mean velocity exceed 13 miles. There was about an average amount of moisture in the air, at 3 p.m. *E. M. Berkhamsted, September 19, 1906.*

Answers to Correspondents

ABIES NOBILIS GLAUCA: *G. H. C.* We do not know that this variety is more subject to splitting than is any other Conifer.

APPLE: *J. Mc* The disease is Apple rot, caused by a fungus Gloeosporium fructigenum. Spray the trees next spring with a solution of sulphide of potassium, ½ ounce of sulphide dissolved in a gallon of water. The first application must be made when the Apples have just set, and successive applications at intervals of a fortnight. These sprayings must be carried out without fail where the disease has previously been present. Diseased fruits should not be allowed to rot on the ground, but, together with all diseased fruits hanging on the trees, should be removed and destroyed by burning.

BEDDING PELARGONIUMS: *H. W.* There is no fungus disease present We have had several similar complaints of plants having been injured by creosote whilst growing near to roadways laid with wood so treated See also the reply to J. W. printed below.

BOG MYRTLE: *H. L.* If you want to obtain the use of a cold storage, you may write to Messrs Thos Rochford & Sons, Turnford Hall Nurseries, Broxbourne, Hertfordshire. We do not think, however, that such treatment would be of any service for the purpose you mention. Myrica Gale being a deciduous plant, it would probably be possible to lift it now, giving it sufficient check to cause rest, and, following this by etherisation, bring it into such a condition that it might be forced into growth again by November Failing this you might press the growths very carefully as they do herbarium specimens, so as to retain the colour in the leaves, and if the result is as good as might be expected, they would be of use at the wedding and could be made to appear almost as fresh specimens.

BOOKS: *J. H. E. The Origin of Species*, by Charles Darwin, can be obtained from our publishing department, price 2s. 9d. post free.

EGG PLANT: *H. L. F* This is the popular name for Solanum ovigerum. The plant requires similar treatment to that given to Aubergines Seeds and plants can be obtained from the nurserymen.

ETHER AND ACETYLENE GAS AS APPLIED TO PLANT CULTIVATION: *Hortus.* We know of no special work on the subject of the etherisation of plants published in the English language The *Acetylene Journal* is published in Chicago. See a note referring to the subject of acetylene gas on p. 213 of our present issue, and in our last and previous issues information may be found on the etherisation of plants.

FORSYTHIA SUSPENSA: *B. L.* This species may be capable of growing to a height of from 20 feet to 30 feet if trained against a wall in suitable conditions.

HORTICULTURAL JUDGE: *A Constant Reader.* Horticultural judges are generally selected from first-class nurserymen and gardeners of long and wide experience. They are not only well-versed in the practical details of horticulture, but in most cases they are men who have obtained a reputation for obtaining unusual success in the cultivation of plants, fruits, or vegetables, and they are invited to judge classes in which their special knowledge will be valuable. It would be impossible, therefore, to recommend you a book that would fit you for such a responsible and onerous position as the judging of cultivated products imposes upon those who undertake the task. Practice in the cultivation of plants continued for a long period and under varying conditions is the one essential quality a horticultural judge should possess, and if he has this experience, and it is combined with a good theoretical knowledge of the subject and familiarity with the methods obtaining at the best exhibitions, so much the better

HORTICULTURAL TRADE JOURNALS: *Hortus Horticultural Trade Journal*, Horticultural Printing Co, Junction Street, Burnley *Horticultural Advertiser*, A. & C. Pearson, Lowdham, Notts. *The Nurseryman and Seedsman*, 30, Wellington Street, Covent Garden, London. *Fruit, Flower, and Vegetable Trades Journal*, Biggs & Co., 139-140, Salisbury Court, Fleet Street, E.C. *Fruit Grower, Fruiterer, Florist, and Market Gardener*, Geo. Tucker, 1, 2 & 3, Salisbury Court, Fleet Street, E.C.

HORTICULTURAL TRAINING: *M. L. L.* Apply to the Superintendent, Horticultural Department, Reading College, or to the Royal Botanic Society, Regent's Park, London.

LAWN UNDER PLANE TREES: *F. C.* We think that sulphate of ammonia would be better than nitrate of soda to apply to lawn-grass under Plane trees, because the ammonia would be retained more in the surface soil than the nitrate would be, and therefore is less liable to be washed into the subsoil, where it would quickly be appropriated by the roots of the trees themselves. About 50 lbs. to the half acre may be applied, to which it would be advisable to add 25 lbs of superphosphate or basic slag. These manures may be mixed together and sown broadcast in the month of February next, adding a little sifted earth to ensure their more even distribution. In the meantime apply a dressing of sifted horse droppings, or of peat-moss manure. These may be applied at once so that they may be exposed to the rain during winter.

NAMES OF FLOWERS AND FRUITS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at one time: they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *H. P.* Apple White Transparent.—*Walter Lane.* Apple Lady Sudely.—*J. M.* 1, Beurré d'Amanlis; 2, specimen had decayed.—*Thomas Murray.* Apple Lady Henniker.—*Pinehurst.* Pear Autumn Bergamot; Apple Yorkshire Beauty (Greenup's Pippin) *Mrs G.* Apple Dumelow's Seedling (Wellington): Pears, 1, Autumn Josephine; 2, Uvedale's St Germain.—*Dr. B., Worthing.* We have failed to determine the variety of Apple you have sent us from trees obtained from France under the name of Calville Rouge, and which you have found to be so utterly worthless. The variety recommended to you by the nurseryman you mention was probably Calville Rouge Précoce, which is a good Apple. You would do well to graft the tree with some choice variety that is known to succeed well in your district They will soon make good "heads" if the branches are not cut back too closely before grafting is done. At first sight the fruits resemble Catshead, but they are not as good as that well-known variety. Calville St. Sauveur is the most conical variety of the section, but it is of much better quality on comparison with your specimens. —*A. R.* Apple Dean's Codlin.—*J. B.* 1, Marie Louise d'Uccle; 2, Marie Louise; 3, Josephine de Malines.

NAMES OF PLANTS: *J. S. F.* Alnus glandulosa var. quercifolia The small black "bobs" are the female catkins.—*L. H.* 1, Polygonum cuspidatum, 2, Polygonum Persicaria; 3, Solanum nigrum.—*W. & S.* Achillea Ptarmica.—*J. W.* 1, Yucca aloifolia variegata; 2, Dracæna intermedia, 3, Myrtus communis (Myrtle); 4, send better specimen with flowers; 5, Tradescantia zebrina, 6, Tradescantia viridis; 7, Sempervivum urbicum.—*L. E. S.* Veratrum nigrum. —*C. G.* Ruellea macrantha (flowers) and Strobilanthes Dyerianus.—*W. E., Pembroke.* 1, Abelia triflora, 2, next week; 3, Saponaria officinalis flore pleno.—*H. C.* 1, Bocconia cordata; 2, Asclepias curassavica; 3, send specimen with flowers; 4, Cryptomeria japonica.—*C. P.* 1, Kochia scoparia; 3, Schinus molle (Pepper tree); The seedlings 2 and 4 are not sufficiently developed to name with certainty.

NARCISSUS AND TULIPS: *W. & S.* For successful bulb growing it is essential that the soil should contain an abundant supply of humus matter. This is best given in a mixture of horse and stable manure with cow manure in about equal quantities, or peat-moss manure may be used, but is not so good for the purpose. This should be well incorporated in the soil previous to planting the bulbs; the sooner it is done the better. When making up the beds for planting give a dressing of bone meal and dried blood manure, three parts of the former to one part of the latter. Apply 6 ozs. per square yard of surface soil, or 1 lb to a barrow-load of earth. This may be lightly forked or raked into the soil. Concentrated, nitrogenous manures should be avoided in bulb growing, otherwise foliage will be produced at the expense of flowers, and the bulbs will be liable to rot.

PELARGONIUM IN THE BEDS IN FRONT OF BUCKINGHAM PALACE: *W. H. C.* The fine scarlet-flowered zonal variety in these beds is the one known as Paul Crampel, which was noted on p. 122 of our issue for August 18 as being exceedingly effective in the Gunnersbury Park Gardens. It is the best variety of its type.

PELARGONIUMS IN PARLIAMENT SQUARE: *J. W. & others.* The injury has been caused by the vapour from the recently laid creosoted wood-paving on the adjoining road, supplemented by the dust charged with creosote from the same source and carried to the plants by the south-west wind. The plants in the square, even as far away as the Catalpas in the Palace Yard, Houses of Parliament, have felt the effects, and the first tree in the row has suffered considerably, the edges of the leaves being burned and growth reduced almost to a standstill. The trees have been afforded water in abundance and also frequent washings to counteract the ill-effects. It has been found that in Hyde Park, adjoining Park Lane, in the new gardens in front of Buckingham Palace, and in the new Mall, creosote upon the roadways has been injurious to vegetation in recent years. Eight newly-planted Plane trees that stood in the track of the south-west winds were killed outright and others suffered. The plants in the flower garden were in many cases killed; others were put in, but similar results followed, most of the plants being thus changed three times in 1904, when the new roads were paved. A remedy against creosote is to cover the wood paving with fine gravel; an example of this may now be seen on the new road near the Admiralty Buildings, but where the roads are of a more public nature as are those at Parliament Square and near the Palace this remedy could not be conveniently applied.

RAISING ORCHID SEEDLINGS: *J. B., Hamburg.* An excellent contribution on this subject is to be found in the report of the Orchid Conference (1885) of the Royal Horticultural Society. A more recent article containing the exact information you require was published in the issue of the *Gardeners' Chronicle* for November 2, 1901, p. 317, and may still be obtained from our publishing department. Darwin's *Fertilisation of Orchids* is published in very cheap editions, and you would gather much useful information from it. Another work on the subject is *Orchids, their Culture and Management*; this book can be obtained from our publishing department, price 20s. 6d. post free to Hamburg.

SWEET PEAS FOR FLOWERING IN FEBRUARY: *J. J.* We scarcely think you would meet with much commercial success with Sweet Peas, if it is imperative to clear the crop so early as the end of February, but if thought desirable you could, under restricted conditions of culture, get them into flower at that time so as to obtain flowers over a few weeks. If the seed has not been already sown, it should be sown at once, selecting early flowering varieties such as "Mont Blanc." After transferring the plants to the houses early in December, they would need continuous artificial heat Being grown in pots the growth will be somewhat restricted and the flowers only of secondary quality with short stems. If a large quantity be placed on the market so early in the season we are doubtful of the venture proving remunerative. When Sweet Peas are grown, however, under more liberal conditions, by planting them out in rows, they usually pay well, but the plants if so treated would not flower so early as you desire.

COMMUNICATIONS RECEIVED.—J. A., South East Africa.—W. E. Broadway.—F. W. Moore.—W. W. (many thanks).—W. C. M.—M. S.—W. C. & Sons.—H. H.—H. M.—L. W. —H. M. G. E. F. M. H. L.—J. B.—W. S. & Sons.—A. M.—J. G.—A. D. R.—Eccles.—D. R. D.—J. McC.—H. R. C. H. P.—T. F. D.—G. D.—W. J. V.—F. T.—W. H.—W. F. G.—O. T.—S. W. F.—E. M.—G. W. S.—H. M.—W. B. H H. H.—W. L.—T. F.—W. H.

HOLLIES, NATURAL AND UNNATURAL, IN THE ROYAL GARDENS, KEW.

Temple Press Ltd., Printers, 9-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,031.—SATURDAY, September 29, 1906.

CONTENTS.

ILLUSTRATIONS.

THE LAW OF GARDEN FIXTURES.

IN comparatively few cases are market gardeners or nurserymen the owners of the freehold (i.e. the absolute owners) of the lands which they occupy for the purposes of their business. The vast majority are merely tenants of some landlord, and are therefore materially concerned in the question of fixtures and the law relating to them. This branch of the law involves the consideration of the rights of such traders in respect of conservatories, greenhouses, and other similar erections which they may have put up during their tenancy, and it may therefore perhaps be said to furnish the subject which, from the legal point of view, bears most closely upon the ordinary business of a nurseryman or market gardener. One often hears doubts expressed as to what erections or articles may be taken away at the end of a tenancy and what have to be left behind by a tenant on changing his premises. Such questions as these can only be grasped by one who has some knowledge of the law with regard to fixtures, a brief outline of which it is now proposed to give.

Fixtures and Chattels.

The first thing to be borne in mind is that unless an article is actually *attached* to the land, or to some building which is upon the land, by some physical means it is *not a fixture at all, but is what the law calls "a chattel."* In this case it remains the property of the tenant who placed it on the land and it may be removed by him at pleasure. For example, all articles which merely *rest on the surface* of the soil, as distinct from being built into it, are chattels pure and simple, and belong absolutely to the tenant who placed them there.

If this fact is clearly borne in mind, a great deal of the confusion which seems to surround the subject will disappear.

Tenant's Fixtures.

There are, however, certain cases in which the law recognises the right of the tenant to remove even fixtures properly so-called, that is to say: Articles and erections actually attached or fastened to the land. Whether the tenant can do so or not depends upon whether such fixtures fall under the category of "tenant's fixtures" or under that of "landlord's fixtures." Tenant's fixtures may be defined as "those which may be removed by the tenant during the continuance of his tenancy," and it is important to bear in mind that they comprise only such articles as can be taken away without doing any real damage to the landlord's property.

This, then, is the first and principal test of whether an erection falls within the category of tenant's fixtures, i.e., can it be removed without causing serious injury to the land? If it cannot, then we shall generally be safe in saying that it is *not* a "tenant's fixture." Unfortunately the converse of the rule does not always hold good, and when the cases bearing on the point are looked into one might be disposed at first sight to think that there is an extraordinary conflict between the various decisions given on different cases as they arise. The reason of the apparent confusion is that so much depends upon (1) the actual purpose for which the fixtures are set up, (2) on the manner in which they are affixed, and (3) on the occupation followed by the tenant who erects such fixtures. The matter becomes greatly simplified when it is borne in mind that the rights of a tenant differ materially according to whether he is a trader, such as a nurseryman, who, for the purpose of his business, is bound to erect greenhouses and other fixtures, or, whether he is an agricultural tenant who makes erections not for the primary object of his business but as convenient accessories thereto, or, lastly, whether he is merely a private individual who maintains a garden for his own pleasure.

Nurserymen and Market Gardeners.

Dealing in the first instance with nurserymen and market gardeners who carry on business for the purpose of trade or profit, it is clear that their position is much more favourable than that of the two other classes mentioned above. It is obviously essential for nurserymen to erect greenhouses and grow plants and trees on the land for the purposes of their trade, and they are therefore entitled to special protection when their tenancy comes to an end. This point is set out very clearly by a judge who decided a case well-known in the trade. An extract from the judgment in that case reads as follows:—"Shall it be said that the great gardeners and nurserymen in the neighbourhood of the metropolis who expend thousands of pounds in the erection of greenhouses, hot-houses, etc., are obliged to leave all those things upon the premises, when it is notorious that they are even permitted to remove trees (or such as may be likely to be such) in the thousands in the necessary course of their trade? If it were otherwise the very object of their holding would be defeated." It will be seen, therefore, that the reason why special advantages are given to traders is that the law recognises the principle of the necessity of encouraging trade and commercial enterprise.

For the reasons above stated nurserymen and market gardeners are entitled to remove greenhouses, hot-houses, and similar structures of wood and glass as well as furnaces set up for the purpose of heating such buildings, and it has been decided that even where a wooden building was raised on a brick foundation (having a brick chimney) the tenant was entitled to remove it before or at the end of his term since it was set up for the purpose of his business. In another case a tenant has been held entitled to remove a steam engine to which a chimney was necessarily an adjunct.

Curiously enough there would seem to be no reported case in the English Courts dealing with the question as to whether in addition to being entitled to remove structures composed of wood and glass a nurseryman is also entitled to remove the low brick walls on which such structures usually rest. The point was once mentioned in a case heard in Scotland, and although this special point did not have to be decided by the Court, two of the judges nevertheless expressed their opinion that in the circumstances of that particular case the bricks constituting the walls in question might also be removed by the tenant.

During or before the expiration of his tenancy a nurseryman or market gardener is also entitled to remove trees and shrubs growing in the ground if planted in the way of trade so as to form part of his stock-in-trade, and this rule applies even to fruit trees in full bearing provided they are really nursery trees and not trees of such a size as to render it impossible for them to be dealt with in the way of trade. Similarly he can remove shrubs and plants even where they are used for the purpose of making a border to the paths.

Farmers.

A tenant who is a farmer, as distinct from a market gardener or nurseryman, is in a much less fortunate position, for (with the exceptions created by Acts of Parliament hereafter to be noticed) the law does not extend to him the privilege (granted to the two latter classes as "traders") of removing fixtures which have been erected or affixed to the soil for the purpose of his business or calling. Farming, for some inscrutable reason, is not recognised by the law as a "trade," and accordingly the rule in the case of the occupier of a farm or agricultural holding (in the ordinary and limited acceptation of the term) is that all "fixtures" placed on the land by the tenant become the property of the landlord unless he complies with the conditions of the Agricultural Holdings Acts. It is, however, necessary to bear in mind that the rule applies only to fixtures in the strict legal sense; that is to say, to structures and other articles which are actually affixed to the land, or to some building which is built on, or itself attached to, the land. However bulky, and however substantial the thing

may be, so long as it only rests on the surface of the land it is not a "fixture," but, as already explained, remains a "chattel" in the eyes of the law, and may therefore be removed by the tenant who placed it there. For example, it is possible to put up machinery, and even agricultural buildings, in such a way as not to be let into the soil, and therefore not to become "fixtures." Barns, granaries, sheds or mills erected upon blocks, rollers, pattens, pillars or plates resting on brickwork (if not affixed to the land by being let into it, nor united to the land by mortar, nails or otherwise) are not treated as "fixtures," and the farmer can take them away notwithstanding that they may have sunk into the ground by reason of their own weight. If an agricultural tenant erects a wooden barn which, by its own weight, rests upon a foundation of brick and stone let into the ground it can be removed by him. A wooden stable standing upon blocks and rollers has also been held to be removable by the tenant.

As already stated, such articles as those above enumerated are not "fixtures" at all, but are removable on the express ground that they have never been affixed to the soil. So far as fixtures properly so-called are concerned, the farmer as such has, apart from Acts of Parliament, no special privileges, but stands in exactly the same position as a private person.

The first exception to this rule was created by an Act passed in the year 1851, which enabled the tenant of an agricultural holding to remove at the end of his tenancy certain specified fixtures provided they were erected with the previous consent in writing of the landlord and certain other conditions were complied with. But the most important modifications of the rule were created by a series of Acts known as The Agricultural Holdings Acts, the benefits of which are shared by market gardeners and farmers alike. These Acts (as well as the question whether nurserymen are, or are not, entitled to share their benefits equally with market gardeners) will be considered more fully in a subsequent article, but it may be here stated that their general effect is to confer upon the tenant the right either to remove or to receive compensation at the end of his tenancy for certain improvements and fixtures which he may have carried out or erected on his holding provided he complies with certain conditions.

PRIVATE INDIVIDUALS.

The rights of a private individual who maintains a garden for his own pleasure and not for profit are at common law practically identical with those of the farmer, but he is not entitled to the benefits conferred on the latter by any of the Acts just quoted. His rights, therefore, are more restricted than those of any other class of tenant. He may, it is true, remove structures put up for ornament or domestic convenience provided he can do so without causing material damage to the landlord's premises, but this is a privilege which is shared by the farmer and, indeed, by tenants of every class. He may not, however, remove fruit trees even though he has planted them himself, nor in strictness can he take away hedges, plants, or even a border of Box. (In practice it is understood that amateurs often "pot" a few of their favourite plants some time before the end of their tenancy!) It has also been held that a non-trading tenant cannot take away a conservatory erected on a brick foundation affixed to and communicating by windows and doors with rooms in his dwelling-house even where he has put it up at his own expense. Neither can he remove a verandah, the lower part of which is attached to posts fixed in the ground. Furthermore, a non-trading tenant cannot take away greenhouses constructed of wooden frames fixed with mortar to foundation walls or brickwork, and some learned writers have doubted whether he could even take them away if they merely rested on the foundation walls or ground by reason of their own weight. However, this seems to carry the doctrine rather far in favour of the landlord, and there is certainly one decided case where a rector was held entitled to remove his hot-houses without incurring liability for dilapidations. A private tenant cannot remove a boiler built into the masonry of a greenhouse, but, on the other hand, it has been held that he is entitled to remove the pipes with heating apparatus connected with such boiler by screws.

Tenants should remember that when putting up a fixture screws should always be used in preference to nails.

Lastly it should be borne in mind that small circumstances often alter cases very materially, and there is always a possibility of some special fact taking a particular case out of the general rule. For this reason the question of whether an article is a fixture at all, and if so whether it is a "landlord's" or a "tenant's" fixture, must always be decided more or less on the merits of the particular case in point. *H. Morgan Veitch.*

HERBACEOUS PHLOXES.

DURING the months of July and August, and much later in northern districts, and in the south also where special attention is given them, herbaceous Phloxes are almost without a rival in the herbaceous border. The year 1906 will long be remembered as one most trying for these plants, especially for those growing in light soils. The small amount of rainfall has necessitated much watering, and in cases where this has been neglected the plants have presented a miserable appearance. Adequate moisture at their roots is essential in the case of these plants, because they produce the majority of their roots quite near to the surface of the soil, and it is from this reason the plants quickly suffer from excessive sun-heat and drought. They are much benefited by applications of liquid manure.

Garden Phloxes should never be planted in highly-mounded beds; rather should the plants be placed in a shallow depression, or at the level of the ground, where they will receive the full benefit of the rain or of any water that is applied. In some respects light soils are better than those of a more retentive nature, which, during dry weather, form deep fissures in all directions, and lose the whole of their moisture; although repeatedly moving the surface of the ground and early mulchings of some light material will do much to modify these evils, especially if sufficient water is applied to prevent the soil cracking. It is quite obvious, judging by the many excellent groups of these plants seen at recent meetings of the Royal Horticultural Society, that the requirements of these moisture-loving plants can be met even in a dry season. Indeed, it is hardly possible to conceive anything finer of its kind than the splendid groups, wholly composed of Phloxes in the best varieties, brought this season from the neighbourhood of Birmingham by Messrs. Gunn & Sons. The exhibit of these plants by this firm at the Holland House Show this summer was much the finest thing of its kind I have ever seen in the early days of July, the splendid inflorescence and the brilliant colours of the flowers being remarkable, and affording evidences of high-class culture. The plants had doubtless been grown under glass for a time. That so highly decorative a subject can be had in such perfection early in the season, and by means of later flowering varieties as late as October, is an item of much importance. Border Phloxes are not merely moisture-loving subjects: they are, in addition, gross feeders.

An abundance of good varieties exists, and the cultivator can select a snow-white flowered kind such as Tapis Blanc (see fig. 74 in our issue for September 8) with growths about 1 foot in height, or one with equally pure white flowers, such as Sylphide, that grows 3 feet in height. The first-named variety recently received an "Award of Merit" from the Royal Horticultural Society, and the excellent condition in which it was shown should do much to render it popular where very dwarf kinds are desired. For a mixed arrangement of scarlet Begonias, or as a carpet plant for Lobelia Queen Victoria (also a moisture loving subject), this dwarf Phlox should make an ideal subject, the more so from the superb quality of its individual flowers. To many persons, however, the taller kinds possess the greater value, and in the gardens these are ever conspicuous during their season of flowering. The greater amount of their fibrous roots are made by these plants during the autumn and winter; the early autumn is therefore a suitable season for their planting. *E. H. Jenkins, Hampton Hill.*

WESTWICK HALL.

WESTWICK HALL, the residence of Major Petre, is a white stuccoed mansion built in the reign of Queen Anne, and is pleasantly situated in a well-timbered park on the road from Norwich to North Walsham. Not far from the estate is the church of St. Botolph, situated in the village of Worstead, which is a noted one even in Norfolk, where fine churches are unusually numerous. It is built of stone in the decorated and perpendicular styles, with an embattled western tower with pinnacles, and contains several monuments to the Berney and Petre families.

The gardens at Westwick are not extensive, but they are remarkable for the culture of hardy plants, Apples, and Pears. The gardener, Mr. Davison, invariably secures the leading awards for hardy flowers at shows in the neighbourhood. The position of head-gardener at Westwick has been held by the Davison family for three generations. The present gardener succeeded his father seventeen years ago, but his grandfather held the same position in 1828. At the present moment there is still another generation in being, and Mr. Davison's son is a promising youth under the careful tuition of his father.

WESTWICK MONTBRETIAS.

The gardens have lately been brought into greater prominence by the introduction of the improved varieties of Montbretia referred to on p. 197 of the *Gardeners' Chronicle*, as well as several others, of which George Davison, the finest of yellow-flowered forms, is such a great acquisition to the hardy flower border where a bright August and September display is required. In addition to those named, the "Norvic" is another variety deserving notice. In height it reaches 3 feet 6 inches, and one inflorescence had as many as eight branches. The flowers are of large size and rich yellow colour, with a deep orange-red coloured exterior. The view of these Montbretias as they grow is very different from the appearance of a few cut flowers, and is convincing as to their value as garden plants. For example, that extremely large variety Prometheus (see fig. 93) filled one border

many yards in length. The plants were growing from 3 feet to 4 feet in height, and were abundantly furnished with flowers, each of which measured about 3½ inches in diameter.

Mr. Davison does not practice the "dot" system of planting herbaceous plants, but prefers the massing of one kind together to provide a mass of colour, and as his borders are wide he can do this successfully. One long, wide border, so planted at the foot of a Holly hedge with an eastern exposure, must be a glorious sight in July and August. At the foot of a high west wall many interesting plants were to be seen. Never have I seen Cypripedium spectabile in a mass growing so luxuriantly; some strong plants were ripening seed. After flowering is past a mulching of sandy leaf-mould is applied to encourage the surface roots to produce and to keep this in a moist condition a low-growing mossy Saxifrage is allowed to grow on the soil. Gentiana verna is present in a remarkable patch planted but two years ago. Moisture, sandy leaf-mould, and partial shade are found to favour its growth here. G. acaulis fills two beds in front of a low greenhouse, and the plants were growing in the same site in the year 1878! About every sixth year the plants are lifted, and the whole of the soil removed to a depth of 18 inches. The plants are pulled into pieces and replanted. Hendhera sanguinea is treated differently here than is usual. The plants form a carpet for Rose beds, and they furnish a sheet of colour every year. In July the plants are pulled into pieces, dibbled into the soil at about 6 or 8 inches apart, and when the flowering season approaches the soil is quite covered by them. Kniphofia (Tritoma) John Benary was remarkably fine, fully 8 feet in height and a mass of glowing red, quite the best variety of this type of Kniphofias. K. Rufus was attractive, and so was the yellow-flowered variety Ruta. Tropæolum speciosum, growing at the foot of a west wall, 14 feet in height, was a remarkable sight, presenting a mass of its glowing, crimson blossoms and purple seed pods. Never have I seen this plant so effective. Galaxiaphylla, growing near to Genista racemosa on this wall, and furnished with luxuriant foliage, was very happy. Gladiolus primulinus was still flowering gloriously. Statice cyanea precox, with its pretty blue flowers 4 inches in diameter, was a dwarf but showy plant.

The crop of Apples is a remarkable one. Mr. Davison has during the last few years planted these largely for market purposes, and the trees have succeeded uncommonly well. As many as 300 trees of Lane's Prince Albert, an equal number of Ribston Pippins, and Bramley's Seedling, as well as a number of Worcester Pearmain and Allington Pippin, have been planted. The trees are planted 12 feet and 15 feet apart. Ribston Pippin was remarkably luxuriant in both growth and fruit, especially the standard trees of this variety. The more established trees from which exhibition fruits are gathered are espalier-trained specimens in the kitchen garden.

Pears on trees growing against walls were also extremely fine in quality. *W. Young Bowman.*

FIG. 93.—MONTBRETIA "PROMETHEUS": COLOUR OF FLOWERS ORANGE-YELLOW WITH CRIMSON MARKINGS. FROM SPECIMENS RECENTLY EXHIBITED BY MESSRS. WALLACE.

NOTICES OF BOOKS.

FUNGOID PESTS OF CULTIVATED PLANTS. By M. C. Cooke, M.A., LL.D., V.M.H., A.L.S. Spottiswoode & Co. 10s. 6d. net.

As a mycologist, Dr. Cooke has been known for the past half-century, and during that period has done more to advance the general study of mycology than any other man. The late Rev. M. J. Berkeley, whose articles are mainly published in these columns, may, without fear of contradiction, be styled the founder of vegetable pathology, more especially of that branch which deals with injuries caused to the higher plants by fungi. Cooke continued the study of this branch, and the book under consideration embodies his latest views on the subject. It is reprinted from the *Journal* of the Royal Horticultural Society, Vols. 27 to 29, and its primary object, which is stated to be "to interest and instruct the cultivator in the simplest and most practical manner," has most decidedly been at-

tended with success. As implied by the title, the diseases of cultivated plants only are dealt with, as the following headings show:—"Pests of Flower Garden," "Pests of Garden Vegetables," "Pests of Orchard and Fruit Garden," "Pests of Vinery and Stove," "Pests of Ornamental Shrubbery," "Pests of Forest Trees," "Pests of Field Crops." In addition, there is a chapter on "Fungicides," also a general introduction dealing with the life-history of typical forms of fungi. The student will search in vain for any reference to the many theories which from time to time have been propounded. Dr. Cooke is perhaps what many younger and less experienced mycologists would define as belonging to the old school. Respecting the subject of heteroecism, for instance, the author is somewhat pungent in his remarks, and perhaps he is quite justified; for, however interesting the subject may be from the standpoint of abstract science, it has not proved to be of any service in combating diseases. The idea, that if one of the two host-plants on which a given fungus is supposed to exist during different periods of its development were removed, the pest would of necessity be obliterated, has, unfortunately, proved to be erroneous. If a fungus usually accustomed to a change of host cannot do so, on account of the removal of one of its food plants, it simply sticks to the one remaining, and carries on its destructive career just as if nothing had happened.

The illustrations are profuse, and mostly very characteristic. There are twenty-four coloured plates and twenty-three figures in the text. The general symptoms of each disease, along with a description of the fungus causing it, are described in language that the practical man can understand. Curative and preventive measures are also given. Fortunately, Dr. Cooke's old-fashioned views led him to make but one index; that, however, is a very full one. Just to show that I am not in accordance with the author on every point, I may say that I object to the title "Fungoid Pests," on the ground that such pests are real fungi, and not something resembling fungi. The book is printed on good paper, well bound in half-calf, and is in every sense a credit to its author and to the Royal Horticultural Society, under whose auspices it has appeared. *Geo. Massee.*

PLANTES BULBEUSES, TUBERCULEUSES, ETC.

UNDER this title Mr. Raphael De Noter has compiled, and M. Charles Amat, 11, Rue Cassette, Paris, has published a treatise for the use of amateurs giving brief descriptions and cultural details of the principal bulbous plants. We think that had the author passed the now waning summer in this country he would not have spoken of the climate, at least in the south, as *brumeux et triste*. Because these epithets are sometimes correctly applied it does not follow that they always would be so. It would not be correct to describe Paris as always bright and sunny; we know by experience that it can be sometimes as *triste* in the matter of weather as London itself in November. The various genera of Amaryllids, Irids, Lilies, etc., are treated of in alphabetical sequence. The term "bulbous" is used in a very wide sense, and includes Berberids, Asclepiads, Boussingaultias, Campanulas, and various other genera which are technically not bulbous plants; but the amateur for whom the book is written will not trouble himself about inconsistencies of that sort. The cultural details are concise and appropriate, the illustrations numerous, and there is a good index. Moreover, the "etc." of the title serves to cover many things

PLANT PORTRAITS.

AGERATUM ARNOLDIANUM. *La Belgique Horticole*, September.

HIBISCHUM ROSASINENSIUM. *Revue Horticole*, Col. Supp. September 1.

THE ALPINE GARDEN.

BORDER PINKS AT HOPETOUN HOUSE.

AMONG the special features of the gardens at Hopetoun House, West Lothian, the residence of the Marquis of Linlithgow, is a collection of border Pinks, which includes some eighty varieties, that are cultivated in groups consisting of a number of each variety. The collection is the most complete private one in Scotland, and it is doubtful if there are many others of its size elsewhere. These deliciously fragrant flowers are great favourites with the family at Hopetoun House, and Mr. Thomas Hay, the gardener, sees that the collection embraces the best of both old and new varieties. The Pinks comprise the old self-coloured varieties, as well as those of modern introduction; while the exquisite laced flowers, the pride of the Pink fanciers of olden days, are fully represented, as are numerous varieties of more recent production. "Perpetual-flowering" Pinks are not so numerous, but this is solely because they do not succeed well at Hopetoun. The fine white variety, Her Majesty, is still appreciated for its handsome white flowers; but a greater favourite is alba fimbriata major, the larger-flowered variety of our old border Pink, alba fimbriata, whose fragrance is unexcelled among Pinks. Mention must also be made of the very choice variety Buen Retiro, with its white flowers that possess handsome rose-coloured centres; the rose-tinted Paddington, an old variety that holds its own among newer flowers of its class; and the handsome laced variety Minerva, with its pretty rose centre, is very good here. A good Pink is erecta, so named from the habit of its pleasing flowers; another is the handsome Morna, with large, white flowers and deep maroon-crimson lacing, one of the choicest of all. Then there are the prettily fringed Oriel, whose flower possesses a pleasing rose-tinted centre; the handsome Lufra, with large flowers of good colour, the centre being maroon and the lacing deep red; Old Chelsea, a flower of Mr. James Douglas' raising and among the best, with its rose centre and heavy rose-red lacing. This variety is extra fine at Hopetoun. The charming Snowdrift, one of the newer varieties, figures in my notes as "extra fine." The flowers have a flush of rose in their centres. Another especially noted was Capo di Monte, a lovely flower with a white ground and a centre and margin of rose. Harry Hooper, one of the best laced Pinks, was well represented; and the strong-growing Fairy, with its admirably shaped flowers, was also doing well. Other good kinds include Mrs. Laban, white, with a pink centre; Rainbow, a rose-laced flower, with a centre of deeper rose colour; Mrs. Waite, Rubens, Mrs. Fred Hooper, Mrs. Maitland, Bojard, the charming Argus, Gem, white, with rose centre and lacing; Arthur Brown, Captain Hunter, a grand variety with large, well-formed flowers having a deep red and margin; John Ball, still a favourite with all who appreciate the best laced Pinks; the pretty Mrs. Waite, with lacing of a medium width; Reliance, Zurich, a good, white flower with a crimson centre; the exquisite Amy, with its fine maroon centre and a lovely lacing of the same colour; Beauty, a large flower of fine form and with a centre of rosy-crimson; Evelyn, Godfrey, and a large number of others. I also noticed a grand breadth of that unsurpassed Mule Pink, Napoleon III.—the fine plants seen would raise the envy of many growers; another Mule Pink, which is usually known as Dianthus multiflorus hybridus; and a lot of the new hybrid Dianthus Mrs. Dixon were flourishing. These Pinks are mainly grown in broad borders in the vegetable garden, and the plants are in excellent health. As an old lover of the Pink, I was delighted to see so many varieties and such excellent culture. *S. Arnott.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT MOUNT HARRY, BRIGHTON.

THE collection of R. G. Fletcher, Esq., at Withdean (gr. Mr. Garnett), contains a very large number of Odontoglossums, some of which are always in flower. The month of May is the show season of the Odontoglossum, and this year in May it is said that over three thousand Odontoglossums, principally O. crispum, bloomed at Mount Harry. As in most other collections, the chief object is to obtain handsomely blotched forms, and in this particular some success has been obtained. At the present time but few forms of O. crispum are in bloom, but in one of the houses there is a show of O. Hunnewellianum and O. Adrianæ in flower and bud. In one house there is a very fine batch of Odontoglossum Pescatorei, which flowers here very freely. Over five hundred plants of the batch are said to have flowered, and only one, O. excellens, has as yet appeared.

At the end of one of the houses a group of Orchids was blooming at the time of my visit, including Sobralia Veitchii, Vanda cœrulea, Odontoglossum Hallii, O. triumphans, O. Wallisii, O. luteo-purpureum, Oncidium macranthum, and other showy species. In the warm house, with Allamanda on the roof, the plants of Dendrobium Phalænopsis were in bloom, and in the Cattleya-house were Sobralia xantholeuca, S. macrantha Kienastiana, Cattleya intermedia, and its white variety; Lælio-Cattleya Nysa, and some other hybrids and a good lot of Cattleya Trianæi and C. Schroderæ in sheath.

The central stage of the next warm house had some enormous plants of Eucharis grandiflora in tubs, the old flower-stems showing what a fine crop of flowers they had produced. The side staging contained a good selection of Cypripediums, C. Stonei and some of the C. Leeanum varieties being very large plants; one specimen of C. niveum having three spikes a foot in height and bearing two flowers on each. The Phalænopsis also thrive well.

CATTLEYA × DAVISH (velutina × Hardyana).

This pretty companion to C. Maroni (C. velutina × C. Dowiana aurea) is flowering in the collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). The flowers are similar in size and shape to those of C. Maroni, and are borne on two-leafed pseudo-bulbs. The sepals and broader petals are of Indian yellow colour, delicately veined and slightly tinged with purple, some purple spots also showing towards the wavy edges of the petals. The side lobes of the lip, which fold over the column are short, yellowish, and are streaked and margined with rose-purple. The disc of the lip is orange-coloured, with lighter yellow lines, and the broadly-expanded and nearly circular front lobe of light rose-purple, finely veined with ruby-purple and with a pale orange tinge at the apex. *J. O'B.*

CYPRIPEDIUM × LAWRENCEANO-NIOBE.

A very worthy addition to the crosses in which C. Fairrieanum has been used, and in which the features of C. Spicerianum and C. Fairrieanum derived from C. Niobe, effectively combine with the colours and more massive form of C. Lawrenceanum. The upper sepal, which partakes most of C. Spicerianum, is pure white, with a dark purple band up the middle and shorter feathered rose-purple lines on each side. The base is of pale green colour, with short, emerald-green lines ascending into the purple ones. The ciliate petals are extended, pale green, tinged with rose on the outer halves and spotted with chocolate-coloured dots on the inner. The lip is greenish behind, and dull purplish-rose on the face and sides. The staminode is rose coloured, with a central red and green spot. The plant has flowered with Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins).

THE ROCK GARDEN AT LILFORD HALL.

THE accompanying picture (fig. 94) of three interesting and beautiful hardy plants in full flower in Lilford Hall Gardens, Northamptonshire, the residence of Lady Lilford, is calculated to impress the reader far more than words would do. It is an object-lesson indicating the positions in the rockery in which these plants will succeed.

Androsace lanuginosa is a native of the Himalaya, and without doubt the most valuable garden plant of the genus. The stems, which are frequently red-coloured, are of trailing habit, and are freely furnished with inch-long, ovate, acuminate leaves that are heavily clothed with soft, silky hairs. A large number of the prostrate stems issue from the base of the plant about the root stock, and after a stem has reached a few inches in length it produces a roundish, clustered head of blossoms toned to a delicate shade of pink, and having a rather conspicuous yellow eye. Presently, a new growth appears from near the old flowering stem, and this in turn furnishes a further cluster of blossoms, and this secondary flowering is continued for many weeks in succession. Disliking manure and rich soils generally, the plant is perfectly at home in a very sandy compost, loam or peat, and is benefited by the presence of old mortar rubble. No more beautiful plant for clothing old walls or rocky slopes could be chosen, and if provided with a deep rooting-medium and perfect means of drainage, the plant will give but little trouble. The flowering period is from May, or early in June, until October. Cuttings of unflowered shoots, made about 1 inch in length, will easily make roots at any time from August to October, and they always root freest under a hand-light. Dibble the cuttings into an inch-deep bed of sand. The group of plants shown in the illustration had been planted by Mr. Edward Wilson, the head gardener, only 14 months when the photograph was obtained.

The Ramondias and Cypripedium afford a pretty picture of floral companionship. In the illustration we see a rocky face studded with two very beautiful Ramondias—R. pyrenaica alba and R. serbica, the latter with mauve-lilac flowers. Below, in the front of the picture, is a group of Cypripedium spectabile growing in a moist peat-bed. The Ramondias press closely to the rock, and from beneath the rugged or blistered leafage appear the flowering stems a few inches only in height. Usually three flowers are produced on a single stem, occasionally more. Very sandy soil or peat and light loam in a mixture, with entire shade from hot sunshine, constitute the chief requirements of these Ramondias.

Cypripedium spectabile under cultivation assumes its greatest vigour when the points of its yellowish root fibres are in a position to touch moisture constantly. This condition, and a foot-deep bed of peat, leaf soil and loam will suit it admirably. The plant is not adverse to manure, and overhead shade is very desirable. The best planting season is from October to December.

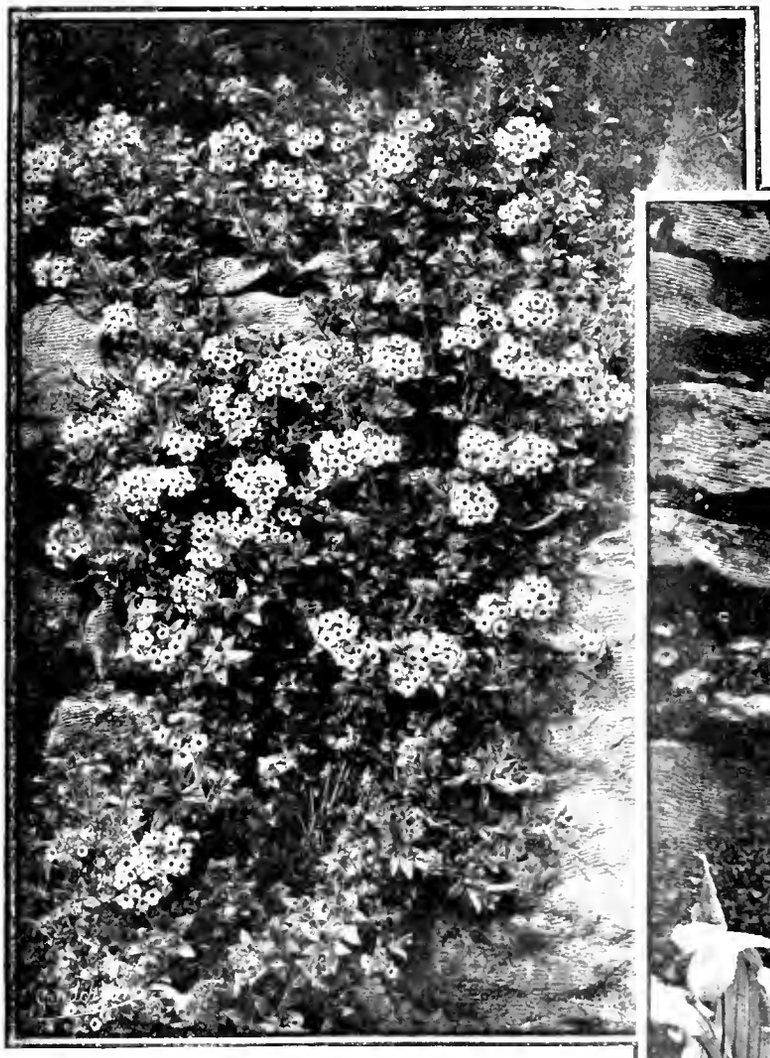


FIG. 94.—ANDROSACE LANUGINOSA IN LILFORD HALL GARDENS, OUNDLE.

RAMONDIAS AND CYPRIPEDIUM SPECTABILE IN LILFORD HALL GARDENS, OUNDLE.

MODERN BOTANY.

(Concluded from page 217)

"We now approach another aspect of the question. Much has been said on the value of anatomical characters in classification, and it is pretty generally conceded that they ought to be taken into consideration, though, like the other characters, they are beset with their own special difficulties. As Dr. Scott[1] who has always urged their importance says: 'Our knowledge of the comparative anatomy of plants, from this point of view, is still very backward, and it is quite possible that the introduction of such characters into the ordinary work of the herbarium may be premature; certainly it must be conducted with the greatest judgment and caution. We have not yet got our data, but every encouragement should be given to the collection of such data, so that our classification in the future may rest on the broad foundation of a comparison of the entire structure of plants.' This passage was written 12 years ago, and we are still awaiting its realisation.

"It is perfectly true that in the case of recent proposal to found a new natural [illegible] of flowering plants anatomical characters [illegible] consideration; still, on the whole, we [illegible] content to rely on the traditional [illegible] that have been transmitted from [illegible] old taxonomists. So much material [illegible] pass-

[1] D. H. Scott, Presidential Address [illegible] 1900.

ing under the hands of our systematists that they cannot devote the time for the elaboration of a fresh method. In particular there are the new things which require docketing and provisional description. Circumstances, as ever, place obstacles in our way and tend to make us unprogressive.

"Now it seems to be of the first importance that reform should come from within; that those problems, which are systematists' problems, should be solved by taxonomic specialists.

"I am sanguine enough to believe that much might be done by a redistribution of duties, especially if this were accompanied by the fusion of the great herbaria, to which reference has already been made. But the greatest hope, I think, must lie in the possibility of some form of alliance or understanding between the authorities responsible for the administration of the herbaria on the one hand and the local university on the other. For directly you give the keepers or assistants in the former a status in the latter, you place at the disposal of the systematists a considerable supply of recruits in the form of advanced students possessing the requisite training to carry out investigations under direction. And if this be true of the herbaria, it holds equally in all the branches of knowledge represented in the National Museum. Really, I fancy our Museum is rather anomalous in its isolation. I am confident that any understanding or arrangement that might be reached would be attended with great reciprocal advantage. Nor am I speaking without some data before me. The movement towards a closer relation between the museum and the university has already entered the experimental stage. For on several occasions during the last few years members of the Museum staff, from more than one department, have given courses of lectures in connection with the university schemes of advanced study. From all I hear, the experiment may be regarded as distinctly encouraging.

"Before leaving this subject it may be appropriate to recall that the English edition of Solereder's great work on 'Systematic Plant-anatomy' is rapidly approaching completion, and should be available very shortly. Its appearance cannot fail once more to arouse discussion as to the importance of anatomical characters. I hope the result produced may reward the devotion and labour with which Mr. L. A. Boodle and Dr. Fritsch have carried out their task.

"In another and even more fundamental branch of systematic work the future seems to be full of promise. We are beginning to recognise that a vast number of the species of the systematist have no correspondence with the real units of nature, but are to be regarded rather as subjective groups of plexuses composed of closely similar units which possess a wide range of overlapping variability. That such might be the case was apparent to Linnæus, but the proof depends on the application of precise methods of analysis.

"In the year 1870 our great taxonomist Bentham happened to meet Nageli at Munich, and, as we find recorded in Mr. Daydon Jackson's interesting life, 'had half an hour's conversation with him on his views that in systematic botany it is better to spend years in studying thoroughly two or three species, and thus really to contribute essentially to the science, than to review generally floras and groups of species.' Bentham does not appear to have been convinced, for his comment runs: 'He is otherwise, evidently, a man of great ability and zeal, and a constant and hard worker.' At the time of this interview Bentham was seventy years old, Nageli being about 9 years his junior. The views of the latter are now bearing fruit, as we see in the important results already obtained by De Vries and others who are following the methods of experimental cultivation with so much success.

"The supposed slowness of change has been a difficulty to many. This was one of the 'bars' left by Darwin in the way, and it has driven back many a 'Timorous' and 'Mistrust.' Now, as we are gradually perceiving, it is only a channel hon after all; a thing to avoid and pass by. The detection of the origin of species and varieties by sudden mutation opens out new vistas to the systematist, and along these he will open his way. It will take many years of arduous work this re-investigation of the species question. The collections of our herbaria form the provisional sorting-out from which we must start afresh. In the long run it may be that our present collections will prove obsolete, but that will not deter us. The scrap-heap is the sign and measure of all progress.

"The Garden thus becomes an instrument of supreme importance in conjunction with the herbarium, and that is another reason for the transfer of South Kensington to Kew. The resources of the latter could then be directed more fully than ever to the advancement of scientific botany, and the Gardens will be revealed in a new light: for the operations and results of experimental inquiries would form a new feature, very acceptable to the specialist and public alike. And, as I am on the subject, it may not be out of place to remark that we all look forward eagerly to the time when the multifarious activities of Kew will permit the development of other features of which traces are already discernible. The arrangement of the living collections is at present based largely on horticultural convenience, geographic origin and systematic affinity, happily subordinated to an artistic or decorative treatment. In time we shall go further than that and attempt in some degree to reflect current botanical ideas in the grouping of our plants. Let me illustrate my meaning by a good example. The Succulent House is generally conceded to form one of the most interesting and stimulating exhibits to be seen at Kew—not merely from the weird and grotesque forms assumed by the individual plants, but chiefly because here you have assembled together plants of the most varied affinity having the common bond of similar adaptation to a like type of environment. The principles that underlie the arrangement of the best sort of museum may be applied with advantage in the case of a garden, and with tenfold effect; for is not a live dandelion better than a dead Welwitschia? This feature, introduced as it would be with moderation and discretion, would immensely enhance the value of the Gardens both to the student and general visitor.

"But to return from this digression: on the whole the time seems ripe for the new departure. Fresh lines are opening up in systematic botany that call for special provision. Now it was evident from the circumstances of the botanical renaissance twenty-five years ago that when it acquired strength, some re-adjustment between the old and the new would have to be made. The thing was inevitable. The administrative acts of recent years all point in the same direction. The founding of the Jodrell Laboratory, the enhanced efficiency of the Gardens, the great extension of the Herbarium building, all help to pave the way. But more is wanted. Reference has been made to the advantages that would attend the migration from the Natural History Museum. But it is most important of all to devise a mechanism for securing a flow of recruits to carry on the work. This would follow in the wake of a rapprochement with the schools on the lines already sketched out. Difficulties, no doubt, will be encountered in the initial stages of a re-organisation, but these are inseparable from our bureaucratic system. A very hopeful sign is the readiness which the Government has shown in instituting inquiries in the past. That nothing has come of them may be attributed primarily to the attitude of botanists themselves. If they can unite on any common policy, there should be no serious delay in giving it effect."

FOREIGN CORRESPONDENCE.

IRIS TECTORUM.

In addition to Dr. Stansfield's remarks (see p 216) I may state that the plant is perfectly hardy and requires no protection at all. Even the rainy season will do it no harm. As its name implies, the plant grows in Japan on the straw-thatched roofs of the Japanese peasant-houses, and is exposed to all weathers. A mulch applied to the roots in summer is more beneficial than any other form of protection. It comes quite true from seed; among 100 seedlings not one failing. *Max Leichtlin*

The Week's Work.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Brussels Sprouts.—The plants will require to be looked over from time to time for the purpose of removing decaying leaves, for if this is not seen to much damage will be done to the Sprouts through contact with the decaying matter. This vegetable promises well this season. Dwarf Gem is again by far the best variety.

The Storing of Roots.—From now onwards the storing of many kinds of roots will demand attention. Beetroot may not be safely exposed to more than a few degrees of frost. Proper storage room should be provided in all gardens in the form of an underground pit or cellar, but in most gardens nothing of the kind exists, and gardeners are often pushed to know what to do with the crop. When the roots are stored in a root-house, the soil that is placed between the layers of roots should not be allowed to become so dry that the roots will shrivel, nor yet so wet that they would be liable to rot. Decay in these vegetables usually begins at the crown, therefore place the roots in neat layers with the crowns pointing outwards, in the form of a potato clamp, using a thin layer of soil between each layer. Any number of layers may be placed on the top of each other without suffering damage; the crowns will dry, and any decaying matter can easily be detected and the matter put right. Beetroot is best prepared by having the tops broken off, but not too closely to the crown—and at the same time being careful that the rootlets are preserved intact, for "bleeding" is very detrimental to the qualities of this vegetable. Carrots may be stored much in the same way, but Parsnips are better if left in the ground for some time to come, and supplies obtained from the open ground. This, however, is not practicable in time of severe frost, and when such a period is expected, it will be necessary to dig up a quantity of roots and store them. It may, however, be considered preferable to apply a thick covering of litter over the crop to prevent the frost getting into the ground.

Rhubarb.—Early frosts will soon cause the plants to lose their latest growths, and when this has taken place it will be safe to lift the roots which will be forced first, in order to give them a complete rest before they are required for that purpose, in which case they will then respond the quicker to the influence of heat. Seakale roots should be treated similarly before they are subjected to forcing.

Endive.—The blanching of this very useful salad will now require almost daily attention, for when the leaves become harder they will not blanch so readily. There is nothing worse than half-blanched salads of this description, and a greater quantity should therefore be taken in hand now than was necessary earlier in the season, when blanching could be accomplished more quickly. Use inverted flower pots—or straw bands tied round the plants—or any device that is found to be most useful. Lift the plants that are expected to yield a later supply and plant them in frames. A well-arranged succession of these batches will meet all demands. Remove decaying foliage from growing plants as soon as any can be detected.

THE HARDY FRUIT GARDEN.

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

The Storing of Fruit.—Carefully attend to the storing of fruits as they become ready for gathering. They are now ripening in quick succession, and unless great care is exercised, some of them may be handled roughly owing to the pressure of work. In the case of Apples and Pears, keep the dessert and culinary varieties distinct. Trays are useful for small lots, and one variety only should be placed in a tray. A label with the name of the fruit and the date on which it was gathered should be placed to each variety. In storing them, it will be convenient if those now coming into use are placed in positions where they will be easy of access. The latest ripening varieties can be put on the top and bottom stages. Do not stock any speckled, or bruised fruits, or any that are very small. Soft Pears require to be placed on wood wool, which should be laid thinly over the stages. Each fruit should be lifted out of the basket by the hand and placed carefully in

position. I am speaking of selected fruits that will be used eventually for dessert. None but selected fruits should be given a place in the premier fruit room, and on no account should any other matter than fruit be stored in this room, which should be kept scrupulously clean, including the windows. Do not gather all the fruits from one tree at the same time, because some will continue to ripen after a few have been removed, and the particular variety will be available for use over a longer period. The dropping of fruits is not always an indication that they are ripe. Open these first and it will probably be found they are diseased. Fruits intended to be kept long should not be gathered until they are perfectly ripe. The later sorts of Apples and Pears will continue to increase in size yet for several weeks to come.

Orchard Trees.—Very fine fruit is generally obtained from the tops of large standard trees; they are not so large as usual this season owing to the drought, but the late varieties are swelling well. Any that are being gathered now should be selected, and for convenience of storing may be placed in tubs or boxes and stored in any dry place. Small, badly-formed fruits should be disposed of in some other way. Small-fruited and worthless varieties should be discarded, the roots grubbed up, and good varieties substituted. Or the old trees may be re-grafted. Be careful to select varieties that succeed best in the district. Newton Wonder is a large and solid Apple that should be given extended cultivation, being good in colour, and capable of keeping in excellent condition for a long period. The tree is a good grower and very prolific. Royal Jubilee is another fine Apple in season from November till March. Dumelow's Seedling (Wellington) is yet one of the very best, and is, moreover, a great bearer and second to none for culinary purposes from December to April. Annie Elizabeth is also a great bearer, and will keep in good condition till May. King Edward VII. seems likely to be a prolific variety, as it is bearing fruits on quite small trees.

The Lifting and Root Pruning of Fruit Trees.—Proceed with these operations as opportunities occur. The earlier they are accomplished the better chance will the trees be given to make fibrous roots quickly.

THE ORCHID HOUSES.

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

Dendrobiums.—Growers who have recently obtained imported plants of Dendrobium Bartoisianum, D. Bronckartianum, and D. tonkinense, which are supposed to be new species, should place them in pots just large enough to accommodate them for one season. Let such pots be nearly filled with broken crocks, and each plant be made quite firm by tying a few of the pseudo-bulbs to neat stakes. Place the plants in a cool, shady part of the Cattleya-house. Slightly spray them overhead occasionally, and let water be poured through the crocks every day to keep them moist, and so induce the plants to make roots. When the young growths and roots have started well the plants will require potting in the ordinary manner, placing them afterwards in the warmest house until they have completed their growth. The pseudo-bulbs of the first-named species resemble in some respects those of the rare D. signatum; those of D. Bronckartianum are like those of D. thyrsiflorum but darker in colour, the leaves being thicker and more leathery, while the general appearance of D. tonkinense is somewhat similar to D. revolutum, and it is probably a species of botanical interest only.

In the Cattleya-house, plants of Laelia elegans that have just passed out of flower should be repotted if necessary; the new roots which are emitted from the base of the flowering growth will at once enter the new compost, and the plant quickly become re-established. The pseudo-bulbs of this plant are more apt to decay from the presence of an excess of moisture at the root than others of the same genus. Plants of L. purpurata may also be repotted and old plants that require to be broken up may be thus treated. Plants of this species are sometimes seen in a poor condition. One of the principal causes of this is keeping them too long in a pot-bound condition. Previous to repotting each plant, be careful to remove as much of the old soil as is possible without disturbing the roots, cut away all leafless pseudo-bulbs and dead roots. Avoid overpotting, but let the pots be just large enough to allow for two seasons' growth. The two Lælias and their varieties will root thoroughly well in equal parts of fibrous peat and sphagnum-moss, with plenty of small, broken crocks mixed in the compost, to provide perfect drainage.

Plants of Lælia pumila and its varieties that have been in the cool house all the summer are now showing their flower buds in the young growths, and should at once be removed to a light position in the intermediate house, affording them liberal waterings until the flowers are faded and growth is completed. If white scale insects appear, these must be diligently eradicated or the plants will quickly deteriorate. The thin-bulbed Lælia harpophylla has started well into growth, and should be removed forthwith to the intermediate house.

In the cool house plants of Sophronitis grandiflora, also its varieties rosea and Rossiteriana that are growing freely, should be elevated well up to the roof glass at the warmest end of the house and shielded from cold. Afford them plenty of water at the roots all through the growing season.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

The Cooler Weather.—The re-arrangement of the plants in the houses will now require attention, the cooler weather necessitating the removal of all stove plants at present in other houses to their winter quarters. Such plants when returned to the warmer atmosphere should not be unduly excited into root action at this period by applying an excess of water. Any plants which have become unsightly should be discarded and young plants raised in their stead.

Hippeastrums.—Gradually withhold water from plants which have flowered, until, when the bulbs have matured, they may be stored away in pits where the atmospheric temperature is not lower than 48°. Keep in a growing condition any young plants which have been raised from seed, exposing them to full light and sunshine and keeping the foliage free from thrips by frequent light fumigations.

Herbaceous Calceolarias in small pots should be potted on directly the roots touch the sides of the pots, so that they may not experience any check. It is important that these plants should continue to grow steadily at all times, as insect pests are always ready to attack those that fall into a stunted condition.

Anthuriums which bloomed early in the season should be kept somewhat drier at the roots, and if placed at the cooler end of the stove or in an intermediate house to rest, they will be found to succeed much better, and flower with greater freedom, than if kept in a hot atmosphere all the year round.

Alocasias and Marantas now require less water at the roots. The foliage, when kept in a drier atmosphere, is liable to become infested with thrips and red spider, and should therefore be sponged occasionally during the winter months.

General Remarks.—Take advantage of fine days to get under cover the materials that will be required for potting purposes. Thoroughly decayed leaf-mould is one of the most important soil ingredients for the successful cultivation of most pot plants. The growth of the plants and the production of root fibres are more accelerated by leaf-mould than by any other substance. A space should be selected for the heaps, where they may be turned over occasionally to prevent excessive heating or fermentation. Let the manurial qualities of the leaves be preserved as much as possible by ensuring the gradual decomposition which will tend to prevent the presence of fungous growths.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Peach Houses.—The present is a suitable time for lifting or root-pruning any of the trees that require attention at their roots. Trees that have carried yellow, sickly-looking foliage will be much benefited by being lifted and root-pruned. All thick, deeply plunging roots should be cut away, and some sweet turfy-loam, lime scraps, a few wood-ashes, and a sprinkling of bone meal, if the loam is of poor texture, be incorporated in the soil about the remaining roots. If it is intended to replant, the best trees for the purpose are those that have been grown in succession houses. It is important that good drainage should always be provided and the depth of the soil should be about 2½ feet, the first layer to be freshly cut turves placed grass side downwards over the drainage, for these will prevent the finer soil from running into and choking the drainage.

Planting Young Trees.—It is better to plant in a rather poor compost than in one too rich, for young trees have a tendency to make gross growths during the first year or two after planting. The trees can always be mulched and otherwise fed when the fruits are swelling. Planting should be done with great care. Keep the roots near to the surface of the borders and cut away any bruised or broken roots, leaving all cut surfaces smooth and clean. Make the soil firm as the work proceeds, give each tree a good soaking of water to settle the compost about their roots, and syringe them twice daily. Afford temporary shade if necessary. Large trees that are in a bad condition may be attended to now. The better plan will be to prune one half of their root system this year and the other half next season, for this will prevent them receiving too severe a check. When the roots have been disturbed the work of replanting should be pushed on without delay, for if the roots are kept out of the soil for some time they become dry, and then they do not take hold of the new soil readily. Commence opening the ground at a distance of quite 3 feet from the stem of the tree, taking out a trench a spade wide down to the drainage and placing all the roots nearer to the surface when the trench is refilled. As soon as the work is completed the roof-lights should be replaced, but the maximum amount of ventilation should still be given. Cut out any crowded or weak growths and regulate the branches so as to leave a space of 5 or 6 inches between the shoots. Keep the borders in a moderate state of moisture, for this will largely prevent bud-dropping later.

New Peaches.—The variety Duke of York is a welcome addition for planting in the early house, as it ripens as soon as Alexander. The fruits are of fair size with highly coloured skins, and possess a better flavour than that of Alexander. Peregrine is a mid-season variety with large, well-coloured fruits that are of a rich flavour. This excellent variety is a suitable Peach for exhibition purposes.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Hardy Flower Borders.—In the preparation and re-arrangement of these borders, which is appropriate work for the present time, bear in mind the suggestion put forward last week, that in gardens where there are numerous borders of mixed herbaceous plants it is advisable to make each as unlike the other as possible. Nothing is more disappointing than to inspect a garden whose borders, though bright and gay, have nothing distinctive about them, being merely duplications of each other. If in a certain mixed border Hollyhocks, Kniphofias, Aconitums, Montbretias, Phlox, Dahlias, Sweet Peas, &c., are used, these plants should be made a feature of this particular border and not be repeated indiscriminately in all the others. By these means the interest in the different borders may be maintained throughout the garden. In order to obtain this dissimilarity in the borders it is a good plan to devote some of them to particular colours. A border which is so situated that it is not exposed to strong light might be made very attractive by being devoted entirely to plants bearing flowers of different shades of yellow. By making a careful selection of plants it could be made effective throughout the year, or if desired might be made particularly attractive for certain months only. Such perennials as Helianthus, Heliopsis scabra major, Achillea Eupatorium, Centaurea ruthenica, C. macrocephala, Rudbeckia "Golden Glow," and Inula would be suitable for planting at the back of the border, with yellow Sweet Peas and Dahlias interspersed. For the centre and front of the border the following plants might be used: Yellow Kniphofias, Montbretia (including varieties like Excelsior, Koh-i-Noor, Messidor, Geo. Davison, Roy d'Or, Golden Sheaf, and Solfaterre), Hypericum Moserianum, Asclepias tuberosa, Aster Linosyris, Chrysanthemum Horace Martin, Chrysogonum virginicum, Gaillardias (John Harkness and Canary), Senecio clivorum, S. tanguticus, Rudbeckia speciosa, Alströmeria, and many other earlier yellow-flowering plants that will readily occur to the reader. Spaces should be left for planting and sowing in the spring choose half-hardy annual yellow-flowering plants that are suitable for such a border.

EDITORIAL NOTICE.

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

Letters for Publication *as well as specimens and plants for examination, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be published, but kept as a guarantee of good faith.*

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

APPOINTMENTS FOR OCTOBER.

TUESDAY	Oct. 2	Nat. Amateur Gardeners' Assoc. meets.
WEDNESDAY	Oct. 3	Nat. Chrys. Soc. Exhib. at Crystal Palace (2 days).
SATURDAY	Oct. 6	Soc. Franç. d'Hort. de Londres meets.
		German Gard. Soc. meets.
MONDAY	Oct. 8	United Hort. Ben. & Prov. Soc. Com. meets.
TUESDAY	Oct. 9	Royal Hort. Soc. Com. meet.
THURSDAY	Oct. 11	Manchester & N. of England Orchid Soc. meets.
SATURDAY	Oct. 13	Dutch Gardeners' Soc. meets.
MONDAY	Oct. 15	Nat. Chrys. Soc. Com. meets 3 p.m.
TUESDAY	Oct. 16	R.H.S. Show of British Grown Fruits at Westminster (2 days).
WEDNESDAY	Oct. 17	Royal Bot. Soc. Show, Regent's Park.
SATURDAY	Oct. 20	German Gardeners' Soc. meets.
TUESDAY	Oct. 23	Royal Hort. Soc. Com. meet.
WEDNESDAY	Oct. 24	Royal Hort. Soc. of Ireland's Great Fruit & Chrys. Show in Ball's Bridge, Dublin (2 days).
THURSDAY	Oct. 25	Manchester & N. of England Orchid Soc. meets.
SATURDAY	Oct. 27	Dutch Gardeners' Soc. meets.
MONDAY	Oct. 29	Nat. Chrys. Soc. Com. meets at Essex Hall, 3 p.m.
WEDNESDAY	Oct. 31	Kent County Chrys. Soc. Annual Exhib. (2 days).

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—55.9°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, September* 26 (6 P.M.): Max. 62° Min. 42°

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, September* 27 (10 A.M.): Bar., 35; Temp., 61°; *Outlook*—Fine.

PROVINCES.—*Wednesday, September* 26 (6 P.M.): Max 65° Bedford, Min 52° East Coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY—
Sale of Dutch Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY to FRIDAY—
Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY—
Sale of Greenhouse and other plants at Mill Lane Nursery, Cheshunt, by order of Mr. F. Rochford, by Protheroe & Morris, at 11.

WEDNESDAY—
The whole of the Greenhouse Plants, &c., at 213, Clapham Park Road, S.W., by order of Mr. T. D. Shuttleworth, by Protheroe & Morris, at 12.

Sale of Dutch Bulbs, Palms, Bay Laurels, &c., at Stevens' Rooms, at 12.30.

Standard and other Bays, Roman Hyacinths, Palm Seeds, &c., 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY AND FRIDAY—
Sale of Surplus Nursery Stock at Warren Nursery, High Road, Upper Tooting, by Protheroe & Morris, at 12.

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

Sports. The word "sports" is, unfortunately, used by gardeners in more than one sense. Sometimes it is employed to denote variations in seedling plants, such variations being often due to cross-fertilisation in various degrees. At other times it is made use of to indicate those bud-variations which occur suddenly, and often without obvious cause. At present great attention is being bestowed on these sudden appearances, because they have been employed by De Vries as the basis of his theory of "mutation." According to him, in certain plants, at certain times, there is a period of "mutation," or instability, when sports are thrown off, and these sports or mutations are stated to have the characteristics of species, that is to say, they remain constant so long as the conditions of life are not materially changed, and they reproduce their peculiarities from seed. The evidence adduced by Professor De Vries and his followers, as far as it goes, is doubtless unassailable, and the Dutch naturalist's experiments must, of course, be accepted with all the respect that is due to the scientific position of the experimenter. But with the greatest deference to so keen and industrious an investigator, it may be alleged that much more extended and varied proof is required before cultivators can accept the inferences drawn from his observations. It is easy to understand that those people who were wont to call for "missing links" will now feel that there is no necessity, if the theory be true, for the existence of any such intermediate stages, and one source of difficulty is thereby removed. A "species" can, according to the new view, be produced suddenly and completely without any slow and gradual evolution or transition from one form into another. The question then arises, are these new forms such as systematists in general would adjudge to be of specific rank? Nature, said Linnæus, makes no leaps. Leaps are frequent and well defined, say the adherents of the new school. Among the orders of fossil plants there are wide gaps still unbridged, though much has been done of late years to fill up these voids, as, to cite one instance, by the discovery of missing links among Cycads and in Ginkgo in the shape of spermatozoids like those of the higher cryptogams. But, if the theory of mutation is to be generally accepted, there will be no need for the discovery of any such missing links, as the new species will be produced by mutation from the old one complete in all respects, as Minerva is fabled to have been when she sprang from the brain of Jove.

Before these views can be unreservedly accepted by gardeners and plant-breeders they must, we think, have a much larger body of evidence; we must know how and why mutation is set up; why it occurs occasionally and at particular times, and not at others; why certain species like the Œnothera Lamarckiana are particularly subject to it in some places and not in others; whilst, so far as we know at present, the majority of plants never show the phenomena at all. The experience of cultivators, whilst showing the occasional appearance of sports, yet on the whole goes to prove that the occurrence of these phenomena is relatively rare, and that when they do occur they do not remain constant, but very frequently revert to the normal condition. Weeping Ashes produce upright branches, pyramidal Poplars occasionally form spreading branches, curled-leaved Willows not infrequently form flat leaves of the ordinary character, cut-leaved Alders and Beeches very frequently revert to the "entire" form. Variations of this kind originate as sports, and are perpetuated by grafting or some equivalent process and not, as a rule, by seed. Peloriate Antirrhinums, on the other hand, are reproduced from seed, and will continue to be so long as they are watched over by the raisers. Left to themselves, they would probably, in the course of a generation or two, revert to the normal form.

As to the causation of these sports, it is still mysterious, though it is now well known that they are occasionally produced as a consequence of injury from wounds or parasitic intruders of vegetable or animal nature. In most cases, however, the consequences of such mutilations are of a pathological nature only. When one sees an Abies amabilis distorted by gouty swellings due to a coccus or allied insect, or when one meets with a fasciated stem, or malformed and distorted leaves, as one so often does in pollarded trees or old stumps, one recognises that they are either malformations or pathological conditions of no direct genetic significance, indeed, about as likely to form a "new species" as a man with a wooden leg is likely to produce offspring with a leg of a like character.

The trend of modern botanical science, nevertheless, is, as we have said, to assign a greater genetic value to "sports" than the all but universal experience of cultivators would accord to them. For instance, M. Blaringhem, in a recent number of the *Comptes Rendus* (July 23rd, 1906), after citing various instances wherein malformations have been produced in plants as a result of mutilations, as is generally admitted, goes a step further in stating that some of these forms may be perpetuated by hereditary descent in the same manner as the characteristics which constitute species. The instance he assigns is a variety of Maize, which in the north of France ripens its seeds at the end of August instead of at the end of October. This new variety—elementary species he calls it—originated as the result of cutting the main stem level with the ground just as the male flowers were about to appear. New shoots were at once produced from the base of the stock, and these shoots ultimately produced various malformed flowers, from one of which he ultimately obtained the early ripening variety before mentioned. Assuming the correctness of M. Blaringhem's observations (and there is no reason to do otherwise), we are confronted with the question—Was this new "form" a "species" that systematists in general would recognise as such? Or was it what they would call a variety only? Propagators well know that they often get different forms according as they propagate from the base of the stem or from a particular branch, but it would not occur to them to call the new form a new species. Even the most enthusiastic Chrysanthemum grower, who gets such varied results according to the particular bud he "takes" or selects, would hesitate to say that he had been instrumental in forming a new "species."

The whole thing seems to hinge upon the question whether these new forms can be and are perpetuated by inheritance, and that not for one or two generations but in perpetuity, and without the protecting care of the cultivator. If they can, then we must give them specific rank, and a separate name. If, after a longer or shorter interval, they revert, or when the protection and care of the cultivator are terminated, they die out, then of course they cannot rank as a species.

OUR SUPPLEMENTARY ILLUSTRATION depicts the beautiful Rose Gottfried Keller, for which Messrs PAUL & SON, Cheshunt, obtained an award of merit at the meeting of the Royal Horticultural Society on August 14. The flower's greatest charm, perhaps, is the beautiful tinting of its petals, the colour being a soft rose-pink which becomes lost in the base of the petals in coppery shades of yellow. The flower is semi-double and partakes largely of the shape of the Austrian Briar, which was one o

its parents, the other being a Tea-scented variety. The flowers are freely produced and the plant has the desirable quality of flowering late into the autumn. The variety was distributed by the late M. FRÖBEL of Zurich, a notice of whose death was published in our last issue. At the autumn show of the National Rose Society, on the 19th inst., two new Roses of merit were staged. One of these, named Dorothy Page Roberts, possessed tints somewhat similar to those of Gottfried Keller, and we should not be surprised if a similar cross had been effected to produce this flower. It was, however, a flower with many more petals than the one we now illustrate, but the older flowers displayed an open centre that reminded one of the Austrian Briar type.

D'OMBRAIN MEMORIAL.—It is proposed to provide—as a memorial to the late incumbent—an organ and choir stalls in the church at Westwell, of which Mr. D'OMBRAIN was vicar for 37 years. Subscriptions may be sent to the Rev. H. BOYS ROBERTS, Westwell, Ashford, Kent.

PRESENTATION TO MR. G. WYTHES, V.M.H.—On the 22nd inst., the garden staff at Syon House Gardens presented Mr. and Mrs. WYTHES with a richly engraved, antique, silver biscuit box and stand, with an expression of their regret at Mr. WYTHES' departure from Syon, and their best wishes for the future. Mr. TUBB, the senior foreman, made the presentation on behalf of the staff. Mr. WYTHES, in returning thanks, said he should not forget their kindness, nor the good work they had done during the time he had been at Syon.

SOUTH-EASTERN AGRICULTURAL COLLEGE.—The next session of the South-Eastern Agricultural College, Wye, for which 105 students have entered, will commence on October 1. The inaugural address will be delivered by Dr. H. E. ARMSTRONG, F.R.S., on October 2, at 8 p.m. A conference of Fruit growers will be held at the College on October 22, when there will be discussions on Methods of Planting, Fungus diseases, Insect attacks, and Strawberry culture. Those wishing to attend the Conference should send their names to the Principal of the College.

THE PYRAMIDAL HORN BEAM.—In the Solferino Garden at Rouen is a noble specimen of this tree. It is presumably about 40 feet in height, densely branched, the branches ascending and thickly clad with deep green shining foliage. It thus forms a gigantic bush rather than a tree, the general form being that of a globose Arbor Vitæ, and the appearance is very striking.

THE LATE MR. A. J. JORDAN.—The death is announced in the *Agricultural News* (Barbados) of Mr. A. J. JORDAN, Curator of the Government House Gardens. Deceased left the Royal Gardens, Kew, in 1899, to take charge of the botanic station at Montserrat, at the time when the Imperial Department of Agriculture was instituted in the West Indies, with Sir DANIEL MORRIS at its head. Subsequently he held an appointment at Antigua. Mr. JORDAN was well-known at Kew, having, previous to entering the Botanic Gardens, served at Forbes House gardens, Ham. He will be remembered by his contemporaries at Kew for his frequent contributions to the debates at the meetings held for mutual improvement. His genial manner caused him to be held in high esteem by his fellow students.

A PARASITIC ALGA.—Quite recently W. J. BEIJERINK has studied the special mode of life of an alga entirely deprived of green pigment, which, at first sight, would have been placed in the group of lower fungi called Prototheca. This alga lives in the frothy sap of the Elm which is poured out in consequence of the puncture of a moth, Cossus ligniperda. Under its peculiar natural conditions of life this albino plant multiplies without losing its characters. But cultivated in sterile tubes, in the froth of gelatinized beer, for instance, it gradually assumes the green colour and forms, in a few weeks, on the surface of the substratum, green masses edged with yellowish white, comparable to the leaf of certain variegated Maples. The green alga when isolated presents all the characteristics of the genus Chlorella. It forms endogenous spores, as do microbes, and BEIJERINK named it Chlorella variegata, a variegated microbe. Other superior plants deprived of chlorophyll sometimes survive in this condition so unfavourable for nutrition either by parasitism, as in Dodder, or by saprophytism, as in Neottia, &c.

THE BOIS DE BOULOGNE.—A beginning has been made in the famous Paris garden "Bagatelle" to turn it into a public botanical and cultural experimental garden, where the promenader interested in flowering plants, shrubs and trees will have the opportunity of observing them at his leisure. Masses of Roses grown in a natural manner and a special Rose garden are some of the projects entertained by the authorities.

ROSE OBERBÜRGERMEISTER DR. TRONOLIN.—A sport from Madame Caroline Testout was exhibited at a recent horticultural show at Munchen-Gladbach under the name given at the head of this note, which is exactly like the type in form and ground colour, but is marked with deep rose-coloured stripes. This mode of colouring is not quite constant, as occasionally petals appear which are whitish-rose on one half, whilst the other is deep rose. These markings and shadings make the flowers most interesting. The sport possesses all the good properties of the mother plant, which is well known as one of the best Roses.

CITRATE OF LIME IN DOMINICA.—Mr. AGAR, writing to the West India Committee from Dominica, in July, reported that the first shipment of citrate of lime on a commercial scale was being made, and stated that there was no doubt should the experiment be successful, the manufacture of citrate of lime instead of concentrated lime juice would rapidly develop.

FRUITING OF THE MANGOSTEEN IN GUINEA.—The *Revue Horticole* states that the Mangosteen (Garcinia Mangostana), which was introduced into Guinea in 1898 through the intervention of M. MAXIME CORNU, has fruited there this season for the first time, and it is believed that the culture of the plant in Guinea will prove to be successful.

CHILDREN'S CHRYSANTHEMUMS.—At the Show which was held by the *Evening News* Chrysanthemum League, at the Royal Horticultural Society's Hall, on September 20, 21, and 22, about 1,700 children contributed plants, but though many of them were moderately well-grown, there were very few in flower. It was quite evident that the date fixed for the Show was fully three weeks too early, for most of the plants having been grown under partial shade are later than those grown in the market nurseries. The want of colour in the children's plants was somewhat atoned for by the supplementary exhibits, which came chiefly from market growers. There were also floral designs from several leading florists. Messrs. W. WHITELEY, Ltd., Hillingdon, exhibited two large groups of foliage plants, in which the Codiæums were very bright. Chrysanthemums and Solanums in pots were also good. Mr. ERIC F. SUCH, Maidenhead, made a large display with Chrysanthemums which included some of the best new early varieties, and with other hardy flowers a good group was arranged. Messrs. CRAGG, HARRISON & CRAGG, Heston, had an extensive display of Chrysanthemums; pot plants of the varieties which were grown by the children were well represented, also cut flowers of the best sorts were well shown. A collection of Cacti, and various foliage plants from the same firm, filled one of the large tables. Messrs. WELLS & Co., Merstham, showed a praiseworthy collection of Chrysanthemums, including some new early-flowering single varieties. Messrs. R. H. BATH, Ltd., Wisbech, also showed a large group of Chrysanthemums composed of [illegible] varieties. Messrs. DOBBIE & Co., Rothesay, exhibited some very fine Sunflowers, Dahlias, &c. Messrs. CHEAL & SONS, Crawley, had a large collection of Dahlias. Mr. W. A. CUTT, Edmonton, exhibited a group of Ferns and foliage plants, Pteris Wimsetti "Distinction" and Aralias being worthy of note. Messrs. J. CARTER & Co., Holborn, showed a collection of dwarfed Japanese Trees, which created a good deal of interest amongst the children. Mr. R. F. FELTON, Messrs. B. SHEARS & SON, and Mr. HAYWARD, Kingston-on-Thames, were exhibitors of floral arrangements. There were not such crowds at the Exhibition as were seen last year, but this may have been due to the holding of the recent Show for three days. The *Evening News* informs us that the League was inaugurated last year at the suggestion of a Japanese child in Nagasaki, and it has now nearly seven thousand members.

THE CORRUPT PRACTICES ACT. We fear the firm that issued the subjoined notice is not aware of the passing of the Corrupt Practices Act, which will come into operation on January 1, 1907:—"Important. Gardeners' Discount. On all orders for goods as quoted in our price list (or any other good firm's catalogue, from which you may be pleased to give us an order) we allow a discount of 10 per cent. (2/- in the £) if paid within three months or 5 per cent. (1/- in the £) if paid within twelve months from date of invoice. This special discount is for gardeners only, whether orders are given by their employers or themselves. For goods advertised in gardening papers, prices are net, but 5 per cent. for c.w.o. may be deducted."

THE PLANE TREES ON THE THAMES EMBANKMENT.—*A. D.* writes us on this subject as follows:—I do not agree with those persons who say that the Plane trees on the Thames Embankment will be irreparably damaged by the tramway line which is now being laid within a few feet of their stems, although they will undoubtedly suffer greatly in consequence, and much of their beauty will be destroyed. Quite recently, by request, I walked along the Embankment from Blackfriars to Charing Cross and examined the trees, and I must say that I left the scene with feelings of regret deploring the fact that the trees in our noblest of London's avenues were being tampered with. In order to fully explain the situation I may say that the tramway line is being laid to within 6 feet of the stems of the trees, a hard bank of concrete coming still nearer than that to the roots. But this is not all, for owing to the line having been made so close to the trees, hard pruning of the branches will be inevitable in order that the cars may have an uninterrupted passage beneath. At certain places along the route, where there are tall trees whose branches are high up on the stems, this pruning may not be serious, but in such places as that opposite the Temple Gardens, where some of the trees do not greatly exceed 20 feet in height, nearly all the branches will require to be shortened. If the branches on the roadside only are pruned the trees will have a very unnatural, one-sided appearance, to obviate which severe pruning on all sides must be resorted to. It is not my intention to question why the tramline was laid so close to these trees, and especially in a wide thoroughfare like the Embankment, but I am sure that both the well being and the appearance of the beautiful Planes in this noble avenue will suffer greatly in consequence.

BEQUESTS TO GARDENERS.—It is reported that by the will of the late Earl of Iveagh, probate of which was granted on Wednesday last, his late lordship's gardener at Rochampton, who is described in the will as "my old friend and gardener at Roehampton," benefits to the amount of £500, and Mr. Mackenzie, head gardener at Glenferness, to the extent of £200.

THE PRIMULAS OF CHINA.

(Concluded from page 209.)

P. FORBESII is native of the Yunnan plateaux, at elevations between 4,000-7,000 feet. It affects open, grassy, or fully-exposed situations, and is often abundant by the wayside. The soil of the Yunnan plateaux is of a uniform red, clayey sand-stone, but it is in the more rocky places that P. Forbesii luxuriates.

P. pycnoloba is a very curious species, but of little horticultural value. It is native of the dry, warm valleys of West Szechuan, between 4,000-6,000 feet, in situations fully exposed to the sun. The scapes are 6-9 inches high, and arise from a tuft of leaves somewhat resembling those of P. obconica. The calyx is extraordinarily large, and out of this peeps a tiny yellow or bronzy corolla not much larger than a pin's knob.

P. violodora has rose-pink, violet-scented flowers, arranged in several whorls on a scape 9 inches to a foot high. This species is native of Hupeh, between 4,000-7,500 feet. P. etarinosa, with carmine-red flowers, is common in North-Western Hupeh, on grassy mountains, between 7,000-8,500 feet.

P. Wilsoni is a bog plant, with flowers and foliage intermediate between that of P. japonica and P. Poissoni. It is native of South-West Yunnan, at elevations between 6,000-7,500 feet, and Tatien-lu, West Szechuan, between 8,500-9,000 feet.

The well-known P. denticulata occurs in Yunnan between 5,000-7,000 feet.

The vigorous P. pulverulenta delights in marshy land, but in one locality the writer found it particularly abundant and happy in moist places formerly cultivated and now abandoned to coarse weeds. This species is native of West Szechuan, and extends from 6,000-9,200 feet. All the above, except P. etarinosa, are, or have been, in cultivation in this country.

Many of Delavay's species belong to the temperate grassland group, but are not yet introduced. Two of the most remarkable of these are P. blattariformis and P. malacoides. The first-named, as the specific name indicates, singularly resembles one of the sections of Verbascum. The flowers in size and colour resemble those of P. sinensis, and are arranged racemosely on scapes 9 inches to a foot high. A native of Yunnan, P. blattariformis occurs at elevations of 6,000 to 7,000 feet, and is not uncommon. It was described by the late M. Franchet in the *Gardeners' Chronicle*, 1887, series 3, Vol. i., p. 575.

P. malacoides has small white flowers, arranged in several whorls, and thin, roundish leaves. It is common in cultivated areas in the neighbourhood of Tali, Western Yunnan.

HIB. *Alpine*. In Western China, as in the Himalayan and European Alps, this is the group *par excellence*. A long article could easily be written on this class alone, but I have only space here to briefly mention the Chinese species now in cultivation in this country. P. sikkimensis, P. vittata, P. involucrata, P. nivalis and its varieties are essentially bog-loving species. In marshes, by the sides of streams and ponds, between 9,500 to 12,000 feet, they are abundant. P. vittata may be likened to a reddish-purple flowered P. sikkimensis. P. nivalis is a very variable and lovely species. One form—P. nivalis var. farinosa—has delicate blush-purple, delightfully fragrant flowers. In West Szechuan P. sikkimensis occurs in myriads, clothing the banks of streams and ponds, and in the early morning and evening the air is laden with delicious fragrance from its flowers.

In grassy and rather moist places are found P. longipes, P. orbicularis, P. Cockburniana, and P. Poissoni. The first named (*Bot. Mag.*, tab. 8,013) is a native of North-west Szechuan, between 11,000 to 13,000 feet. The flowers are arranged in several whorls, and are dark maroon in colour, with very narrow segments and a peculiar spice-like odour. P. orbicularis. (*Gardeners' Chronicle*, 1906, Vol. xxxix., p. 290) is a yellow-flowered species from West Szechuan. The scapes are 1 to 2 feet high, umbellate or sub-umbellate, with numerous flowers. P. Poissoni is well known in gardens. It occurs between 9,000 to 11,000 feet. P. Cockburniana (see fig. 96) has vivid orange-red flowers—a colour unique in the whole Primula genus. This species was recently figured in the *Bot. Mag.* (tab. 8,073), but the colour shown in the plate is far from being that of the plant itself. Apropos of this colour, is it not remarkable that amongst all the diversity of colour in Auricula and Polyanthus there should be no approach to the orange-red of P. Cockburniana? Hybridists should welcome such a novel colour, since it opens up great possibilities. P. Cockburniana is of somewhat slender habit, with the flowers arranged in several whorls. The scapes, which arise from a rosette of rather light green, membranous, obovate-oblong leaves, are 9 to 15 inches high, and clothed with white farina. Its altitudinal range is from 9,000 to 11,000 feet, so there can be no doubt of its hardiness in this country.

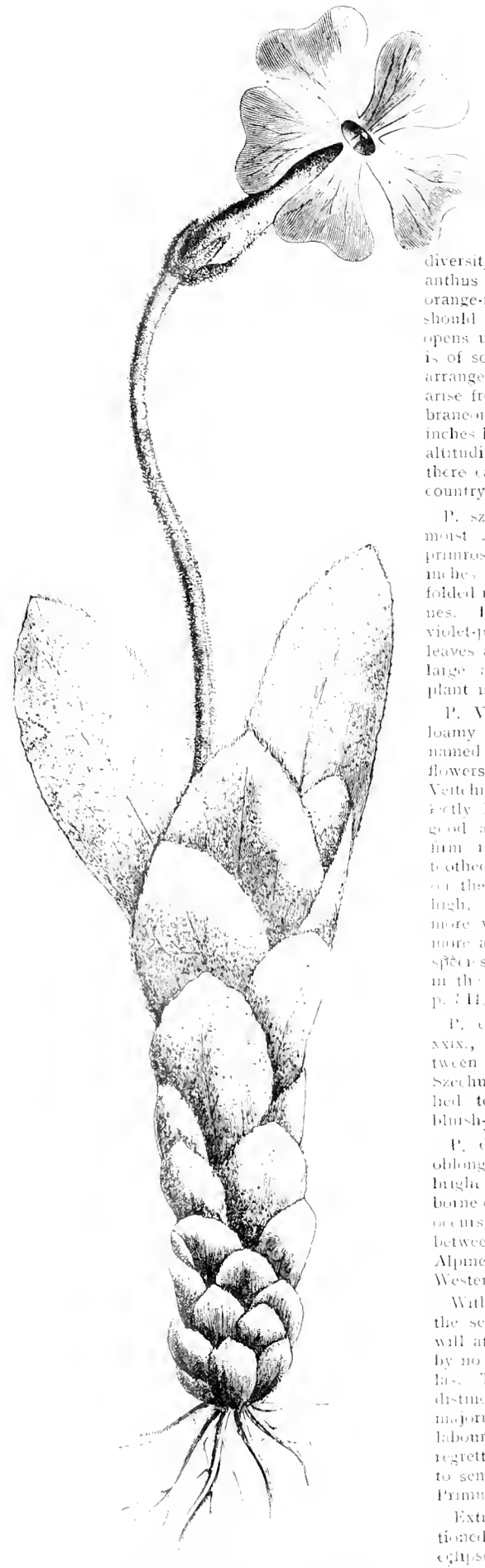


FIG. 95.—THE PRIMULAS OF CHINA: P. VINCÆFLORA; COLOUR OF FLOWERS PURPLISH-VIOLET.

P. szechuanica and P. amethystina frequent moist Alpine meadows. The first-named has primrose-yellow flowers on umbellate scapes 9 inches to a foot high. The corolla-lobes are folded right back in the most extraordinary manner. In P. amethystina the flowers are deep violet-purple on scapes 4 to 6 inches high; the leaves are small and coarsely toothed. To see large areas of moorland carpeted with this plant is something to remember.

P. Veitchii and P. incisa affect rather dry loamy banks exposed to the sun. The last-named is a gem, with deep rose-coloured flowers and small, deeply-cut leaves. P. Veitchii is a Primula with a future. It is perfectly hardy, perennial, easily grown, and as good as P. obconica. The leaves are large, firm in texture, rounded, deeply crenately-toothed, more or less felted with white hairs on the underside; scapes a foot to 18 inches high, usually umbellate, more rarely two or more whorled; flowers numerous, an inch or more across, bright mauve or rose-pink. This species is figured in *Bot. Mag.*, tab. 8,051, and in the *Gardeners' Chronicle*, 1905, Vol. xxxvii., p. 344, Suppl.

P. cognata (*Gardeners' Chronicle*, 1906, Vol. xxix., p. 378) affects moist, loamy banks between 10,000 to 12,000 feet in North-west Szechuan. This is a pretty species, closely allied to the widely-spread P. farinosa, with bluish-purple flowers 1 inch across.

P. dryadifolia is a tufted species with tiny oblong leaves, farinose on the underside, and bright carmine flowers, about ¾-inch across, borne on scapes 2 to 3 inches high. This species occurs on bare quartzose and granite boulders between 15,500 and 16,100 feet, and is the most Alpine of all the Primulas yet known from Western Szechuan.

With only about two dozen introduced out of the seven dozen known to occur in China, it will at once be seen that the Flowery Land is by no means exhausted in the matter of Primulas. The majority of the Szechuan species are distinct from those of Yunnan, and the great majority of the latter remain to reward the labours of some future collector. It is to be regretted that the late Père Delavay was unable to send home seeds of many of the remarkable Primulas he discovered.

Extraordinary as many of the species mentioned in this article undoubtedly are, they are eclipsed by such wonderful species as P. vincæflora and P. Delavayi. These two, with the Himalayan P. Elwesiana, are, in general appear-

ance, totally unlike the plants ordinarily regarded as Primulas. Indeed, the late M. Franchet, of illustrious memory, did propose a new genus for this group under the name of Omphalogramma. P. vincæflora is described in the *Gardeners' Chronicle*, 1887, Series 3, Vol. i., p. 574 (see fig. 95) The flowers are very large, tubular, solitary, on scapes 6 to 8 inches high; leaves oblong, with short-winged petioles. P. Delavayi also has large campanulate flowers, which are fringed, and borne on scapes 8 inches to a foot high, whilst the leaves are reniform with long petioles. Both species are moisture-loving subjects, and occur in North-west Yunnan at elevations between 12,000 and 13,500 feet. The introduction of these most strikingly distinct and extraordinary species is much to be desired. *E. H. Wilson.*

FIG. 96.—THE PRIMULAS OF CHINA: P. COCKBURNIANA; COLOUR OF FLOWERS ORANGE-RED.

WARREN HOUSE, STANMORE.

THE residence of H. L. Bischoffsheim, Esq., at Stanmore, is most pleasantly situated on an eminence, and possesses a charmingly undulated and well-wooded view to the south, where the magnificent Oak trees are a prominent feature. On the gently-sloping lawns there are some notable trees and shrubs. A huge specimen of Rhododendron ponticum covers a space of 90 yards in circumference. In the shrubberies there are many choice subjects in a flourishing condition, such as Eucryphia pinnatifolia, Clethra alnifolia, Buddleia Veitchiana and many varieties of hardy heaths which succeed remarkably well. A specimen of Cupressus lawsoniana alba spicata, 12 feet in height on the grass, is a perfect plant of this choice Conifer.

An interesting and effective method of planting under tall forest trees impressed me. The soil was thickly carpeted with Irish Ivy, over which Golden Hollies were dotted. The flower beds at the east end of the mansion are particularly well placed on the flat, grass terrace, and being backed up with shrubs, &c., the effect is excellent. Lantana delicatissima and L. salvifolia were most effective recently, being a mass of pale mauve colour. The former is especially dwarf in habit and free flowering, but the latter is grown as standards, 3 feet in height. Pelargonium "Constance," of deep pink colour, made an effective display, and so did the Ivy-leaved Pelargonium Souvenir de Charles Turner. Iresine Lindenii, 4 feet in height, intermixed with Lobelia cardinalis, was effective. A pleasing mixture of dark-leaved Cannas and the golden-blotched Abutilon Thompsonii was noticeable.

The glass department is extensive, and the orchard house, fully 100 yards in length, is well stocked with a variety of fruit trees. Peaches are cultivated on the back wall, and the variety Sea Eagle was carrying extra fine fruits. On the front of the house are trained cordon Pears, Cherries, and Plums. The Pear trees were in most instances loaded with handsome fruits. At the extreme west end of the same house there are cordon-trained Gooseberries. The existing crops of Grapes and the general appearance of the vines were very satisfactory. Muscat of Alexandria was especially fine. The new Grape Princess of Wales was carrying such large bunches and berries that the variety should be included even in a limited collection. It appears to be much easier of cultivation than its parent, Mrs. Pince. The variety Barbarossa was represented by some grandly finished bunches, with berries of the full size. The Peach crop was nearly over, but the trees appeared to be in a very satisfactory condition.

The Chrysanthemums numbered fully 1,000 plants. An extremely fine batch grown for the production of large blooms were in a praiseworthy condition. Bush-grown plants promised to flower well later on. A particularly healthy batch of Pelargoniums for winter flowering was noticed. Carnations were good, especially those of the Souvenir de La Malmaison type, flowers of which are required the whole year round. Orchids appeared in excellent condition, and Miltonia candida was finely in flower. The condition of the garden reflects credit on the head gardener, Mr. Ellis, who, I regretted to hear, is relinquishing this charge. *E. Molyneux.*

Publications Received.—*Imperial Department of Agriculture for the West Indies:* Reports on the botanic station, agricultural schools, experimental plots, and agricultural education at St. Lucia, St. Kitts Nevis, and Antigua (1905-1906).—*Agricultural Bulletin of the Straits and Federated Malay States.*—*How to Buy a Business*, by A. W. Bromley, published by T. Fisher Unwin, price 2s. 6d.

A YEW CROSS.

THE illustration at fig. 97 represents a view of the Yew Cross, in the gardens of the Carmelite Nunnery, Darlington. This Yew was planted about 50 years ago by Mr. Joseph Pratt, on the removal of Clare Abbey from Scorton to Darlington. The cross is 10 feet in height, and measures 9 feet across at the base. Each arm is 3 feet in length and 4 feet in thickness. The first step is 15 inches in depth and the second and third steps 12 inches. If this cross is intended as a mark to perpetuate the removal of the Order to its new home, no better subject could well be chosen than the Yew, for its longevity is proverbial. The Yew has long been a favourite plant for the topiarist, and many of the best examples of topiary work are executed in Yew. In Bedfont Churchyard, near London for instance, are two famous Yew trees, trained to represent peacocks, and they bear, in raised figures, the date of their planting, which was 1708.

HOME CORRESPONDENCE.

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

PEACH CULTURE OUT-OF-DOORS.—*A. H.* agrees with Mr. Ward, "that 'blister' in Peach trees is, to a great extent, preventable, not by netting at the critical period to which *North Devon* alluded, but by having the trees in a clean, healthy condition in the spring, and by giving them proper attention in early summer." *A. H.* might have included in the sentence an "if" or a "but." He described the condition of the trees in Mr. P. Veitch's garden at Exeter; these do not offer a fair comparison with trees growing in less-favoured situations. I have on several occasions seen Mr. Veitch's trees, which are growing against a wall of unusual height, and, if memory serves me well, a wall which faces to the south-west. The ground possesses natural drainage, and the position is warm and sheltered, and where one would scarcely expect "blister" to appear. On p. 210 of the *Gardeners' Chronicle* Mr. Molyneux contributed to this discussion. While agreeing with his remarks on the proper attention the trees should be given, one cannot ignore the effect which local conditions have in producing "blister." *A. H.* and Mr. Molyneux would probably alter their opinion if they had much experience of out-of-door Peach culture in certain parts of Devonshire. I can sympathise with *North Devon*, if his trees have suffered badly from "blister," for it is somewhat discouraging to see one's trees, which looked healthy and promising when the leaves were unfolding, suddenly subjected to north, or north east winds, causing partial paralysis of the trees' functions. *East Devon.*

——I was pleased to see the name of that thorough gardener, Mr. Alexander Lindsay, of Ditton Park, mentioned by *D.*, p. 184, in connection with this subject. I served as his general foreman for 5½ years, and under his supervision planted the whole of the trees on the south wall during October and November, 1878. I well remember the cause of replanting. All trees were unnailed in winter, and in the operation an old standard tree of Barrington, with only one branch, that covered well-nigh 300 square yards of wall, was split at the junction of branch and stem. The loss of this tree so spoilt the appearance of the wall, that Lindsay determined to replant the whole. I have seen this fine old tree carrying 12 score of fruits, each averaging ½ lb. in weight and of fine form and colour. We did protect against "blister" in those days, and on many occasions I have at midnight, when signs of frost were apparent, covered the trees with canvas which was always fixed ready for the purpose. During the prevalence of east winds the canvas was kept down in the daytime. Here, on the bleak Chiltern Hills, I find it best to keep the canvas down during the daytime, as well as at night, and though the weather during springtime was so inclement, I have now a good crop of Peaches and Nectarines, and have gathered excellent Apricots. Well-drained and warm borders in winter are the best preventives of "blister." I was for some 12 years in Kent, in a garden on a dry chalk subsoil, and exposed to the east. The trees were never troubled with blister in that garden, but here on a cold clay they are affected with it every spring no matter how well I protect them. I know of no better remedy than hand-picking and burning the diseased leaves. Good Peaches and Nectarines can still be grown on outside walls; the only difficulty is that of meeting the expense of properly preparing the borders. *W. Hancock, Chartridge, Bucks.*

THE PROPOSED CHAMPION VEGETABLE CLASS.—I have been somewhat interested and amused at the correspondence on this subject which has lately taken place in the pages of the *Gardeners' Chronicle*. That a better class has not been provided by such an important society as Shrewsbury is much to be regretted; at the same time, owing to the generosity of the various leading seedsmen, probably no finer vegetables are ever brought together in any part of the globe than have been seen at Shrewsbury, and I really cannot see that Mr. Gibson is asking for anything extraordinary, as *Nous verrons* implied on p. 184. I should like to answer his first question by asking him if he has ever known a keener interest excited in vegetable competition than at the two shows he mentioned, viz., Chiswick and Edinburgh, and did not some of the best growers enter into friendly competition on those occasions? His reference to the fact that certain growers did not compete against each other at Shrewsbury seems to imply that a kind of compact was arrived at between them. I, however, decided to compete for the two classes, viz., Messrs. Bull's and Carter's, immediately the schedule was issued, and I take it for granted that other exhibitors pleased themselves. I have on some occasions competed for most of the leading prizes offered for collections at Shrewsbury. What are *Nous verrons* criticisms as to this? Surely no arrangements could have been made in such a case. Then as to his accusation as to the wrong labelling of the various "dishes," I am inclined to ask myself if he is really a practical man. [He is. ED.]. If so, I am somewhat surprised that such a statement should go forth to the gardening Press; I do not for one moment wish to infer that wrong naming has never been practised, but I do strongly protest against the making of such general remarks without some proof being given. In my own case, only at the last Shrewsbury show I staged and named several varieties which were not of the firm's raising which offered the prizes, although the stocks were procured through them. Nearly all our leading seedsmen possess improved stocks of most of the best vegetables, and they are perfectly justified in sending such stocks out under the names they wish. I do not dispute that *Nous verrons* has overheard the interesting discussion between the visitors. I have on many occasions heard such remarks over stands of Chrysanthemums, Roses, &c. *E. Beckett.*

——I have read with interest, the letters of *A. D.*, *Mr. Gibson*, and *Nous verrons* on the subject of a champion vegetable class at the Shropshire Horticultural Society's show. *Nous verrons*, in his very interesting letter, p. 215, points out that in no class were Messrs. Beckett and Gibson found competing against each other, and apparently suggesting neither cared to risk defeat. But the produce which both these famous vegetable growers staged at Shrewsbury, as well as the artistic manner in which the exhibits were arranged, left nothing to be desired. However, *Mr. Gibson*, as shown by his communication, p. 184, has evinced his willingness to try conclusions with other expert vegetable growers in the event of the suggested champion vegetable class being provided. A reference to this year's schedule of the Shropshire Society, will show that 40 classes (open to all) were allotted for vegetables, eight of which were for collections, and in four of these six prizes were offered, five being offered in three others and three in one class, representing stated money value of £104 5s., in addition to the two cups given by Messrs. William Bull and Sons, of the respective value of fifteen and five guineas. Thus it will be seen that the vegetable classes in this society's schedule have been well and liberally provided for, and, in my opinion, no need exists for a champion vegetable class. But instead of this I would suggest that the management at Shrewsbury should consider the desirability of providing annually a champion gold medal to be awarded to the best collection of vegetables in the show, in addition to any monetary prizes it may win, and thereby proclaim the champion vegetable exhibitor at Shrewsbury for the current year. *H. W. W.*

——I am somewhat surprised at *Nous verrons* taking Mr. Gibson to task for his remarks concerning a champion vegetable class at Shrewsbury. He seems to overlook the fact that the discussion was not started by Mr. Gibson, but by a previous writer with whose letter Mr. Gibson practically expressed his agreement. Mr. Gibson, besides winning Messrs. Sutton's prize, exhibited successfully in the class, the prizes in which were offered by the society, and with no restrictions as from whom the seeds were purchased, a fact *Nous verrons* omits to mention. The proposal that all vegetables should be staged true to name is an excellent one. *Onlooker.*

Photograph by] [*Kyle, Darlington*

FIG. 97.—A YEW CROSS IN THE CARMELITE NUNNERY, DARLINGTON.

OUT-DOOR TOMATOS IN 1906.—The weather at the time these were put out was cold at night, consequently the plants did not make very much headway during June, but in July and August they grew unusually fast. The first to ripen fruit was Carter's Earliest of All followed by the new variety "Sunrise." This latter Tomato is a very prolific variety and forces well. I had in the same plot Duke of York, Carter's Best of All, Sutton's Earliest of All, Market Favourite, Peach-Blow, and Carter's Perfection. The largest fruits were obtained from Peach-Blow and Best of All, but taken collectively there is very little to choose between them. The two that stood out most prominently were the two first-named, Earliest of All and "Sunrise." In a cool house Sutton's "Cascade" is very ornamental, some of the sprays of fruit being nearly a yard long. They are very pretty for garnishing and for decorative purposes. *W. A. Cook.*

A PROTECTION FOR FRUIT TREES IN THE BLOSSOMING SEASON.—Owing to the severe winds we experience from the east during the month of April at Shooters Hill, Kent, my Pear trees have produced practically no fruit for several years past. This year I tried the following experiment: I bought 12 hop poles and placed them in heavy drain pipes (stuffing them in with soil), three to each Pear tree at an angle. I then enveloped as much of the tree as I could with cheap, coarse muslin stretched round the three poles. The result has been a fair quantity of fruit on trees that have produced nothing for 10 years. *H. S. Bartlett, Severndroog, Shooters Hill, Kent.* [Probably the cheapest material for this purpose would be Shaw's Tiffany, a piece about 20 yards long, and about 38 inches wide, costing only about 6s.—ED.]

A BUSH TREE APPLE CENSUS.—We are having a great Apple season, and for that reason it offers an excellent time to obtain from all caring to furnish them selections of the best nine varieties dessert, and the same kitchen, to give a supply of fruit from September till April, those months inclusive. I ask for "bush" growths only, because the bush or dwarf tree on the Paradise stock is certainly the best habited tree for gardens, and is now most widely grown. Selections of this nature may well be made every 10 years or so, as experience of varieties continues to grow. I suppose the desire Equalities in the varieties are free and frequent

cropping, good average size, and quality in the fruits, and the latter ones good keeping also. Form of fruit also has some importance Conical, ribbed fruits are less handsome and more wasteful generally than are broader, round ones. All the same many growers will no doubt include in their lists good croppers, such as Lord Suffield, Lord Grosvenor, Lord Derby, and Golden Spire amongst the cooking section, the one of most importance perhaps so far as form or outline is concerned In the dessert section beauty has importance, and many regard colour highly. Still, quality and flavour, as well as good keeping and cropping qualities, have the higher value. With a view to starting such a census I submit, with becoming deference, the following selections as being in my estimation good ones. They will doubtless lead to abundant criticism. Dessert: Miller's Seedling, Worcester Pearmain, James Grieve, Allington Pippin, Cox's Orange Pippin, Cockle's Pippin, Lord Burghley, Lord Hindlip, and Sturmer Pippin. Cooking Frogmore Prolific, Stirling Castle, Warner's King, Royal Late cooking, Waltham Abbey Seedling, Hercules Pearmain, Bismarck, Lane's Prince Albert, and Newton Wonder. If, say, 100 selections are sent in, the ultimate selection should indeed be a good one. *A. Dean.*

THE POLLINATION OF PEACH AND PLUM FLOWERS.—In Mr. J. Hudson's notes on pot-fruit culture by means of bees (p. 193) mention is made of this method. During last spring I placed a hive of bees in an early Peach house where I had also Cherry and Plum trees in pots which were in bloom at nearly the same period as the Peaches The bees worked assiduously, and apparently saved me much trouble, but after about a week or ten days had elapsed I noticed that the woodwork and glass of the structure was completely spotted over with excrement from the bees, so much so that I had to move them out to save the appearance of the house, which was a new one There was abundance of ventilation all day. The marks were difficult to remove with a scrubbing brush Is this unusual? I have employed bees on several occasions previously, but without this disadvantage. Another thought struck me later on when one or two of the Peach trees failed to set their flowers. Is it possible that bees, by following each other, maybe a dozen times on the same flower, damage the stigmas and cause them to fall prematurely? In their hunger after a winter's rest, it is possible they may damage the delicate tissues of the flower-organs in their search after natural food *Geo Dyke, Garston Manor Gardens, Watford*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 25.—At the ordinary fortnightly meeting of the committees held in the Vincent Square Hall on Tuesday last, the three dominant features were Dahlias, Orchids and dessert Fruits.

The FLORAL COMMITTEE made only one award to a novelty, and this was a FIRST-CLASS Certificate to an Asplenium, but, in association with the committee of the National Dahlia Society, the FLORAL COMMITTEE recommended ten Awards of Merit to new Dahlias.

The ORCHID COMMITTEE recommended one Botanical Certificate and six Awards of Merit to novelties.

The FRUIT AND VEGETABLE COMMITTEE recommended an Award of Merit to an early Apple, a similar award to a variety of the Hessle Pear, and a Gold Medal to Messrs. GEO. BUNYARD & Co. for a magnificent exhibit of house-grown fruit.

In the afternoon there was a lecture on the "Distillation of Perfumes from Flowers" by Mr J. C. Umney.

Floral Committee.

Present: W. Marshall, Esq., Chairman, and Messrs. T. W. Turner, C. T. Druery, H. B. May, Geo. Nicholson, W. J. James, W. P. Thomson, Wm. Cuthbertson, H. J. Cutbush, Chas. Jeffries, C. J. Salter, W. Howe, R. Hooper Pearson, G. Reuthe, J. F. McLeod, Jno. Jennings, J. W. Barr, and R. C. Notcutt.

Kentia Belmoreana was shown as a basket plant by Mrs. STEWART MACKENZIE, Lyndhurst, Haywards Heath (gr Mr. A. C. Smith). There were four plants in a wire basket, the tallest plant being about 6 feet in height from the surface of the root medium. All the plants were of good colour, and appeared in perfect condition, although they are usually suspended in the conservatory. The committee recommended the exhibitor a Cultural Commendation.

Another somewhat unexpected exhibit was a Kale plant four seasons old, shown by Miss ROTCH, whose address did not transpire. The plant was only about 14 inches in height, was much branched, and possessed very much divided leaves.

Messrs. J. HILL & SON, Lower Edmonton, staged an excellent group of Asplenium nidus avis, the Bird's Nest Fern. Some of the plants were large specimens, others were in 48-sized pots, but whether large or small they were all equally well cultivated. One plant showed a remarkable sub-division of the fronds (See Awards.) (Silver Gilt Flora Medal.)

Messrs. W. & J. BROWN, Stamford and Peterborough, staged some of their narrow-petalled (Cactus flowered) varieties of Pelargoniums; a bright display of garden Roses, and a row of the pretty Clematis grata, the petals of which are tinted a delicate shade of mauve.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, filled the same corner of the Hall with a similar display of Clematis as at the last meeting of the society. A basket contained plants of the ornamental-leaved Hypericum Moserianum tricolor, and other baskets held Colchicums and Crocus in flower. (Silver Banksian Medal.)

Mr. JAMES C. FORDY, Castleford House, Warkworth, Northumberland, showed some strong flower spikes of Gladioli, bearing flowers of many colours. (Silver Flora Medal.)

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, staged vases of American or winter-flowering Carnations in many popular varieties Enchantress, Mrs. T. W. Lawson, &c., and two new seedlings—Victory, a promising scarlet flower, and Jessica with white petals striped with red. (Silver Flora Medal.)

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, showed a number of named varieties of Veronica Andersoni. Some were exceedingly pleasing, and among the best were Gabrieli (pink), Mont Blanc (white), Valiere (blue), Favourite (crimson), and Eveline (pink). Interspersed among the Veronicas were hardy Ferns, the majority being British species (Silver Flora Medal.)

Messrs. WELLS & CO., Merstham, Surrey, displayed early-flowering Chrysanthemums in variety from the open.

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, again showed Leonotis Leonurus, and Crowea angustifolia. In the front of the exhibit were some profusely-flowered Begonias, of the winter-flowering type. Large plants of Nerine Fothergilli major were carrying a plentiful supply of their showy umbels of flowers. (Silver Banksian Medal.)

Messrs. R. SMITH & Co., Worcester, showed a miscellaneous group of plants—trees, shrubs, fruits, and flowers. Ornamental Oaks, Elms, Poplars, Conifers, &c., formed the principal subjects.

Messrs. GEO. PAUL & SON, The Old Nurseries, Cheshunt, staged a group of interesting plants. Many sprays of large and ornamental-leaved trees and shrubs, Rose hips of various species, Euonymus latifolius, Rubus laciniatus, &c.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, N., showed a select number of American Carnations.

Messrs. HOBBIES, LTD., Dereham Nurseries, Norfolk, again showed a collection of choice varieties of Cactus Dahlias, and some of the large-flowered Peony type; also a very bright display of garden Roses in most of the well-known late-flowering varieties. (Silver Flora Medal.)

Mr. J. T. WEST, Tower Hill, Brentwood, arranged another large group of Dahlias as at the previous meeting. The varieties were chiefly Cactus Dahlias of the best kinds, and they were well set off by a row of Kochia scoparia.

Messrs. BAKERS, Wolverhampton, staged an imposing exhibit of Dahlias of all types. The exhibit occupied the whole of the platform end of the hall, and it was most effectively arranged exhibit-tripods, vases, epergnes, and rustic arches being utilised for the display. The flowers were relieved with sprays of Asparagus plumosus, A. Sprengeri, Ophismenus, Gynerium argenteum and other showy grasses; small Ferns, &c. (Silver Gilt Flora Medal.)

Messrs. J. CHEAL & SONS, Crawley, showed single-flowered and Cactus Dahlias in many choice varieties. (Silver Flora Medal.)

Mr. CHAS. TURNER, Royal Nurseries, Slough, staged a collection of the charming pompon Dahlias, including several new kinds, some of which will be found described under "Awards." (Silver Flora Medal.)

Messrs. CARTER, PAGE & Co., 52-53, London Wall, London, showed a very large and beautiful exhibit of single, Cactus, and pompon Dahlias. (Silver Gilt Flora Medal.)

Messrs. CANNELL & SONS, Swanley, Kent, also made a big display wth these seasonable flowers, some of which were of the large-petalled type. (Silver Flora Medal.)

Messrs. J. BURRELL & Co., Cambridge, and Messrs. J. STREDWICK & SON, St. Leonard's-on-Sea, exhibited new varieties of Cactus Dahlias.

Messrs. THOS. S. WARE, LTD., Ware's Nursery, Feltham, showed Dahlias of all types. The variety Grand Duke Alexis is noteworthy. The white florets are large and inflated, forming a highly decorative flower. Messrs. WARE also staged a very fine lot of bedding Begonias. (Silver Gilt Flora Medal.)

Messrs. WM. PAUL & SON, Waltham Cross, Herts., exhibited a large group of Roses from the open. The flowers were in good condition, many of the blooms being up to an exhibition standard. The beautiful Frau Karl Druschki was prominent; near by was Corallina, a pretty little Rose of coral-red shade; Warrior is a splendid bedding variety, and one that continues flowering late in the season. Mamam and White Maman Cochet were both in good form. Gottfried Keller, that forms the subject of our supplementary illustration, found a place in the collection that included over 100 distinct varieties. (Silver Flora Medal.)

Messrs. BLACKMORE & LANGDON, Twerton Hill Nurseries, near Bath, displayed baskets of several varieties of bedding Begonias of the tuberous rooting section. Some of the small, double-flowered kinds were exceedingly pretty and very floriferous. One labelled Hollyhock has small rosette-like flowers of a charming salmon-pink shade; Argus is similar, save that the colour is scarlet. Hilda is a larger flower of a delicate salmon-pink shade. Some single varieties at the back were of much merit.

Mr. A. LL. GWILLIM, Cambria Nurseries, New Eltham, Kent, staged flowers of tuberous-rooting Begonias, all of which were this year's seedlings. The varieties of scarlet, salmon, red, and yellow shades were exceedingly handsome, and these plants form splendid subjects for summer bedding.

Messrs. JOHN PEED & SON, Norwood, showed a large array of tuberous-rooting Begonias of excellent quality. The beautiful tints seen in these flowers were well represented: both double and single kinds were included in the exhibit.

Messrs. BARR & SONS, King Street, Covent Garden, London, showed a seasonable collection of hardy flowers, including a good assortment of perennial Asters (Michaelmas Daisies), and spikes of yellow and red varieties of Celosia pyramidalis. Some pans of Colchicum speciosum rubrum were prominent in the front of the exhibit.

Mr. G. REUTHE, Keston, Kent, staged hardy flowers, among which we noticed many of the best varieties of perennial Asters, hardy Heaths Liliums, the brilliant red-flowered Zauschneria californica, &c.

Messrs. WM. CUTBUSH & SONS, Highgate, London, N., showed a seasonable array of hardy flowers, of which perennial Asters formed the principle feature. Some good spikes of Pentstemons were noticed, and a batch of the showy Liatris pycnostachys.

Mr. AMOS PERRY, Winchmore Hill, and Enfield, London, N., showed garden flowers in variety. The beautiful Aster Amellus was shown in many varieties. A. A. Perry's Favourite is of a pink colour; and A. A. Ultramarine is of a very deep shade of blue; they are both excellent kinds. A big group of Solidago Shortii occupied the centre of the group. Other good things noticed were Helenium pumilum nudiflorum, Colchicum speciosum rubrum (very finely

loured), Amaryllis Belladonna, and Cedronella cana.

Messrs. GEO. BUNYARD & CO., Maidstone, Kent, showed their hybrid Physalis, which was figured in our issue for October 28, 1905. Some border Chrysanthemums and perennial Asters were also shown by Messrs. BUNYARD.

AWARD OF MERIT.

[illegible].—This is a very remarkable plant of the type of A. nidus, having the fronds divided on either side down to the midrib, almost as in the case of A. Ceterach, but the divisions are less regular. It is said to have been imported. Shown by Messrs. J. HILL & SONS.

AWARDS TO DAHLIAS.

The new Dahlias were judged by a composite body appointed from the R.H.S. Floral Committee and the National Dahlia Society's Committee. The following varieties were therefore awarded the R.H.S. Award of Merit and the First-Class Certificate of the National Dahlia Society:—

Rodney (Pompon).—An exquisitely formed flower, of deep amber colour, shaded with fawn.

Portia (Pompon).—A beautiful flower of a deep shade of rosy-mauve. The two varieties named above were exhibited by Mr. CHAS. TURNER, Slough.

Ruby Grinsted (Cactus).—An exhibition or "show" flower of the best type. The colour is a shade of rosy-fawn, with orange colour at the base.

Sunshine (Cactus).—The rosy-red flowers of this variety are of the best form and "finish."

Hyacinth (Cactus).—This variety has flowers of pleasing shades of pink and bronze with orange-coloured base.

Meteor (Cactus).—One of the fancy type in which the flowers are irregularly coloured a purplish crimson and white. These four varieties were shown by Messrs. J. STREDWICK & SON.

Daisy Staples (Cactus).—An excellent flower in all respects, with finely pointed florets. The deep shade of pink colour is very attractive. From J. CARTER & SONS.

Kitty (Single).—A perfectly circular flower of much merit. The colour is deep mauve, with a crimson zone at the base of the florets. Exhibited by Messrs. J. CHEAL & SONS, Crawley.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, Francis Wellesley, H. Little, W. Boxall, R. G. Thwaites, Elijah Ashworth, G. F. Moore, Arthur Dye, H. G. Alexander, W. H. Young, T. W. Bond, J. Wilson Potter, Jeremiah Colman, W. A. Bilney, and H. T. Pitt.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, secured a Silver-Gilt Flora Medal for an exceptionally bright and interesting group, the centre of which was composed of a selection of the Rose-tinted Brasso-Cattleya Mad. Chas. Maron and other Brassavola Digbyana hybrids. On each side were batches of the favourite Cattleya "Iris," whose showy colours always attract attention. With them were good specimens of varieties of Laelio-Cattleyas, Cattleya Leda, a pretty new hybrid between C. superba and C. aurea, and other hybrid Cattleyas, Zygopetalum maxillare magnificum, a fine flower with large violet-blue lip; the singular Cirrhopetalum appendiculatum, a specimen of the fine rose-tipped Vanda insignis, the brightly-coloured Sophro-Laelio Heatonensis, &c. Of the hybrid Odontoglossums the most remarkable was the very handsome O. Smithii, for which Messrs. CHARLESWORTH obtained a First-Class Certificate, December 5, 1905, and which was illustrated in the *Gardeners' Chronicle*, December 16, 1905, p. 427. It is the result of crossing O. Rossii rubescens and O. crispo-Harryanum, and for rich colouring and form it is unsurpassed. The flowers are white, with a broad purple border to the sepals and petals, which are heavily blotched with chocolate purple, the front of the lip being rose-purple. Another pretty hybrid was O. Phaedra Hallii × Pescatorei of O. Pescatorei shape; white, blotched with red-brown.

Messrs. SANDERS & SONS, St. Albans, were awarded a Silver Flora Medal for a group of Laelio-Cattleyas and other hybrids, which had in the centre several strong and finely-flowered plants of Vanda Kimballiana; varieties of their Cattleya Iris inversa, Cycnoches chlorochilon, and other species. Of the Cypripediums, the most remarkable were the new and handsome Cypripedium Victory (see "Awards"), and the finely-formed C. Fairrieanum splendens, whose white dorsal sepal was finely marked with purple lines. Others noted were C. Olga Bagshaw, C. Andronicus, C. Sir Redvers Buller, Cattleya Gaskelliana Adrianae, white with a yellow disc to the lip, which has a very small purple spot in front, &c.

Messrs. JAS. CYPHER & SONS, Cheltenham, staged an effective group, for which a Silver Banksian Medal was awarded. In it were some pretty varieties of Dendrobium Phalaenopsis and Oncidium varicosum Rogersii, Cattleya Iris, C. Massiana, C. Brownii, Brasso-Cattleya Mad. Chas. Maron, Laelio-Cattleya Berthe Fournier, &c. Of the Cypripediums noted were C. callo-Rothschildianum, a very pretty C. Phoebe (philippinense × bellatulum), with a pure white ground bearing many dotted purple lines; the fine C. Milo Westonbirt variety, and C. triumphans Westonbirt variety; the very singular and distinct C. insigne W. P. Bound of the unspotted C. Bohnhoffianum class, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cypripedium Princess var. Wellesleyanum (Mons. Coffinet × Fairrieanum), one of the most delicately-tinted of the C. Fairrieanum crosses. The upper sepal is white, with fine purple lines, which branch towards the margin and have a rose tinge between the lines, the base being emerald green. The petals are broad, decurved, ciliate at the margin, which is rose colour, and bearing about a dozen fine dotted lines of dark purple. Lip greenish, tinged with brown on the face and spotted with purple on the side lobes. Mr. WELLESLEY also showed the curious Epi-Cattleya Figaro (E. falcatum × C. intermedia) having fleshy leaves as in E. falcatum and singular flowers, the narrow lanceolate sepals and petals of which are green; the distinctly trilobed lip white with indistinct rose lines on the side lobes, and a yellow tint on the front.

W. M. APPLETON, Esq., Weston-super-Mare (gr. Mr. Brooks), sent Cypripedium Rolfeae, C. Sir Redvers Buller, C. Francis Heygate, Cattleya Appletonae (elongata × aurea), and Zygopetalum maxillare.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), sent Cattleya Lord Rothschild superba, a very large and richly-coloured flower; Laelio-Cattleya Tums (L. cinnabrosa × C. Warscewiczii), with white, salmon-tinted sepals and petals, and purple lip, L.-C. Novelty superba, and a very finely-coloured L.-C. Berthe Fournier. (See Awards.)

Messrs. LINDEN & CO., Brussels, showed a flower of Odontoglossum crispum illustratum, said to be between O. crispum Vinicius and O. c. Perfection. The flower was very finely blotched with rose-purple, the colour covering the greater part of the sepals and petals.

Mr. H. SCHUSTER, Brussels, showed a small collection of hybrids, which included Cattleya Le Czar var. fortissima (granulosa Dubuyssoniana × labiata), a good large, light rose-tinted flower with broad, rose-purple front lobe to the lip; C. Capartiana, a pretty cross between Rex and Warscewiczii; C. Fallieri (Rex × Trianaei), C. Vulcani var. Elisabethae, Laelio-Cattleya bellula (pumila × maxima), and other hybrids.

Messrs. HUGH LOW & CO., Bush Hill Park, showed Cattleya Ariadne (dolosa × labiata) and Cypripedium Fletcherianum. (See Awards.)

AWARDS OF MERIT.

Laelio-Cattleya Berthe Fournier, Holford's variety, from Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—A remarkable colour variation in Major Holford's fine cross between L.-C. elegans and C. Dowiana aurea, which has already produced some remarkable varieties. The flowers in the present variety had the sepals and petals of a deep coppery-rose colour, the showy lip being ruby-crimson with gold veining at the base.

Cypripedium Victory (Euryale Sanders' variety × triumphans).—A very fine hybrid, adhering closely in rich colouring to C. triumphans. The broad, dorsal sepal had the middle area heavily blotched with blackish chocolate colour on a green-tinted ground, the upper part of the spotted lines being continued by feathered rose markings, the same colour tinging the connecting surface, the margin being pure white. Lower sepals, large and circular; petals broad, tinged with purple and with blackish spots on the inner halves; lip tinged with reddish purple.

Cattleya Hardyana Rex, from the Marquis de WAVRIN, Chateau de Rousele, Belgium (gr. Mr. de Geest).—One of the very finest and darkest forms yet shown. Flowers large, sepals and petals rich rose colour, the large lip of an intense ruby-claret colour with gold lines at the base.

Cypripedium Fletcherianum (Godefroyae leucochilum × Lord Derby), from Messrs. HUGH LOW & CO., Bush Hill Park.—A very fine hybrid, excellent at all points, and most comparable with the fine C. Daisy Barclay of J. Gurney Fowler, Esq., which secured a First Class Certificate, July 4, 1905. The scape bore two fine flowers, the ground colour of which is cream-yellow with broad and heavy blotched lines of dark chocolate purple colour, the lip being of pale yellow with a slight freckling of purple on the face.

Dendrobium Arthur Ashworth (Brymerianum × Dalhousianum), from ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook).—A singular hybrid, partaking largely of D. Dalhousianum. Flowers yellow, the lip being fringed and having light purple blotches at the base.

Odontioda Bohnhoffiae (Cochlioda vulcanica × Odontoglossum cirrosum), from Messrs. CHARLESWORTH & CO., Heaton, Bradford.—A very elegant little hybrid, of bright and novel colouring. The spike bore flowers with narrow segments resembling O. cirrosum, blood-red in colour, with some whitish ground showing in places, and a slight purple tint at the base of the sepals and petals. Crest of the lip yellow, spotted with red.

BOTANICAL CERTIFICATE.

Trevoria Chloris, from ELIJAH ASHWORTH, Esq., Harefield Hall, Cheshire (gr. Mr. Holbrook).—The remarkable new genus named by the late F. C. Lehmann in honour of Sir Trevor Lawrence, Bart., and described and illustrated from native specimens, sketched by Mr. Lehmann, in the *Gardeners' Chronicle* May 29, 1897. The illustration shows it to be a very singular and attractive plant, though under cultivation it has not yet appeared at its best. The flowers, which are greenish and fragrant, are produced in drooping racemes, generally of three flowers each.

DIPLOMA AWARDS.

Cypripedium Rothschildianum Hybrids.—1st Diploma.—Cypripedium Fletcherianum, from Messrs. HUGH LOW & CO. *2nd Diploma.*—Cypripedium A. de Lairesse, Westfield variety, from FRANCIS WELLESLEY, Esq.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq., Chairman, and Messrs. W. Bates, A. Dean, A. R. Allan, W. Fyfe, Ed. Beckett, H. Parr, Geo. Kelf, W. Pope, H. J. Wright, W. Barnes, R. Lye, Owen Thomas, Jno. Lyne, H. Markham, F. Q. Lane, Geo. Reynolds, P. D. Tuckett, Chas. Foster, J. Willard, J. McIndoe, W. H. Divers, W. Poupart, A. H. Pearson, Jos. Cheal, S. Mortimer, J. Davis, and Jas. Vert.

Messrs. HARRISON & SONS, Leicester, exhibited fruits of the Leicester Crab, a seedling from the Dartmouth. The fruits are chiefly of a yellow colour, and rather long in form. One might imagine the other parent to have been Kerry Pippin. It is recommended for the making of fruit jelly.

A Cultural Commendation was awarded to Mr. T. H. SLADE, Poltimore Gardens, Exeter, for excellent fruits of Michaelmas Nelis Pear.

Messrs. GEO. BUNYARD & CO., Maidstone, Kent, showed a group of fruits and fruiting trees in pots, of superior excellence. The trees were admirably-grown specimens, and they were well furnished with fruits. Plums, Apples, Pears, Figs, and Grapes were included, the most remarkable being the Apples; a dish of Gascoyne's Scarlet Seedling can only be properly described as superb. These fruits were not only large, but they carried a magnificent colour, and were covered with a delicate bloom; Peasgood Nonsuch, Twenty Ounce, Emperor Alexander, and others were almost as fine. The Pears were also large and shapely, showing high culture, prominent varieties being General Todtleben,

Marguerite Marrillat (some of these fruits must have weighed a pound), Souvenir du Congrès, Durondeau (an excellent dish), Doyenné du Comice, Conference, White Doyenné, &c. A curious Japanese Pear was shown—a tree in bearing—with globular fruits, and very russety skins, of a beautiful golden-brown colour. It was labelled Chiojuro. The Plum trees were especially good, such varieties as Coe's Golden Drop, Late Orange, and President being well furnished with fruits. Pot vines of Appley Towers, Diamond Jubilee, and Gros Maroc Grapes, and small Fig trees completed the exhibit. (Gold Medal.)

Mr. H. J. DOVER, Langley Fruit Gardens, Bath Road, Langley, Bucks., displayed six large bunches of Muscat of Alexandria Grapes.

A group of considerable interest was shown by A. E. SPEERS, Esq., Sandown Lodge, Esher, Surrey. It comprised a very complete collection of ornamental Cucurbitaceous fruits—Gourds, Squashes, Melons, Cucumbers, &c. The popular names were attached to the fruits, thus were seen the Powder Flask Gourd Lagenaria pyrotheca, the Fig-leaved Gourd Cucurbita ficifolia, the Gooseberry-fruited Gourd, &c. The Loofah—Cucumis cylindrica; the Spanish Gourd, the fruits of which are used as seats in Spain; Momordica charanta—the Balsam Apple; the Colocynth-Lagenaria colocynthis; Lagenarias in several species, &c., are some of the more interesting shown. (Silver Gilt Knightian Medal.)

AWARDS OF MERIT.

Apple, Miller's Seedling.—This is not a new Apple, but is apparently very little known throughout the country, although grown extensively in some districts of Berkshire and Sussex. The fruits are medium to large size, very slightly ribbed, of rich yellow colour, with pale-reddish markings on the side next to the sun. The skin is particularly clear and free from the least suspicion of russet. The stalk is thin, about an inch long, and it is set in a deep, narrow, funnel-shaped cavity. The eye was open in the specimens exhibited, and it was set in a very slight depression. The flesh is soft, sweet, and of agreeable flavour, but being fit for consumption at the beginning of August the fruits are scarcely so good at this later date. It appears to be a first-rate early Apple, and there is certainly an abundance of room for Apples of high quality fit for consumption in September and October. The specimens shown were exhibited by Lady WANTAGE, Lockinge Park, Wantage (gr. Mr. W. Fyfe).

Pear Collis's Hessle.—This variety is described as a sport which appeared on an old tree at Chiswick twenty-eight years ago. It is regarded as an improvement on the Hessle Pear, but the fruits as shown had very hard, rough skins, and could not in the least be compared satisfactorily with ordinary dessert Pears. Shown by Mr. FRED. COLLIS, Bollo Lane, Chiswick.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 7.—*Members of Committee present:* E. Ashworth (Chairman), W. Duckworth, Z. A. Ward, J. E. Williamson, H. Smith, W. Stevens, H. Thorp, C. Parker, A. J. Keeling, F. W. Ashton, E. Rogers, J. C. Cowan, and P. Weathers.

The meeting on the above date was held at the Royal Botanical Gardens, Old Trafford. Only a moderate display of plants was staged, although some were of exceptional merit.

First-Class Certificates were awarded to Mr. N. J. BROMILOW, Rainhill, for Cattleya × Iris var. "Marjorie," and to Mr. E. BOSTOCK, Stone, Staffs., for Cypripedium niveum Bostock's var., a very fine form.

Awards of Merit were awarded to Mr. W. THOMPSON, Stone, for Cypripedium × l'Ansoni var. inversum, and a new hybrid Odontoglossum, the parents of which were O. Harryanum × O. Vuylstekeanum. Mr. E. D. BOSTOCK had a similar award for a good form of Cypripedium Charlesworthi named "Holly House var." Mr. N. J. BROMILOW gained a similar award for Cattleya × Iris Mrs. J. Bromilow.

Dr. HODGKINSON, Wilmslow, exhibited the rare Zygopetalum × Roeblingianum, and a pretty variety of Cattleya × Iris. E. ROGERSON, Esq., Didsbury, exhibited Cypripedium × "Mrs. G. Fletcher." *P. W.*

GARDENERS' DEBATING SOCIETIES.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—A general meeting of the above association was held on Tuesday, September 18, Archdeacon Daniells presiding. A display of fruit, flowers and vegetables bore testimony to the support accorded what is termed "Hospital Night," the produce being sent to the Redhill Cottage Hospital. Mr. W. P. Bound presented a brief report of the work of the summer session. Messrs. W. P. Bound and W. Rose were appointed delegates to attend a meeting in London to consider the advisability of uniting the various gardening mutual improvement societies into a central body. The meeting agreed that in future the annual meeting of the society shall be held in January of each year. Mr. Seldon, of Woodhatch House, Reigate, next read a paper on "The Cultivation of the Mushroom." The materials best suited for their growth, the preparation and the forming of the same into beds, spawning the beds, and the proper temperatures to observe, formed the principal items of the paper. The lecture brought forth a good discussion. *Frederick C. Legge*

CROYDON & DISTRICT HORTICULTURAL.—At the meeting of this society held on Tuesday, 18th inst., Mr. W. J. Simpson, a former member of the society, read a paper on "The Sowing and the Germination of Seeds." Three essential requirements for seed germinating are moisture, air, and a proper temperature. Light is not necessary, in fact it is a deterrent. Never sow too thickly—a mistake often made, for even if thinning is adopted, this cannot be done without disturbing the roots of the remaining plants. A good discussion followed the reading of the paper.

ANSWERS TO CORRESPONDENTS.

AGREEMENT IN RESPECT TO HIRING OF GREENHOUSE: *Annoyed.* 1, You can distrain for arrears of rent; 2, From the facts which you give it seems clear that you both looked upon the tenancy as a yearly one. Market gardens come within the Agricultural Holdings Acts, and these Acts require a year's notice to be given, but upon the special facts which you state it seems questionable whether the house is being used as a market garden within the meaning of the Acts. On the whole we do not think it is, and therefore we consider the notice you have given is sufficient, but it is possible that the judge might take a different view. If the tenant refuses to quit at the end of 12 months you had better instruct a local solicitor; 3, The tenant is only entitled to the same amount of water supply as was available when the tenancy commenced.

BOOKS: *W. Hazell.* *Dictionary of Gardening*, by George Nicholson, in five volumes, price £1 2s., or *The Gardeners' Assistant*, in six volumes, price 8s. 4d. each volume. Both books may be obtained from our publishing department.

CAULIFLOWERS BOLTING: *Eccles.* The dry season may have caused the plants to bolt, although at present we see no signs of an inflorescence. Send another specimen when the plants are further developed.

CONSTRUCTING A CHEAP GREENHOUSE: *Tropical Grower.* By your reference to a house measuring from 10 to 12 feet, we conclude that you only require one sufficiently large to admit of your raising 10,000 seedling plants of Chrysalidocarpus (Areca) lutescens, and that you contemplate sowing the seeds in boxes and allowing the seedlings to attain to a height of 6 inches before potting them. If we are correct in our supposition, a low, span-roofed house, 12 feet long and 10 feet wide, running north and south, will answer your purpose, and will be large enough to contain your 10,000 seedlings when potted into small pots measuring 3 inches in diameter. A 4½-inch brick wall, 9 inches high, resting on a 9 inch wide foundation, will be a sufficient base on which to construct the house. The woodwork should consist of 4½ by 3½-inch wall plates, bevelled on top, not only sufficient to receive the rafter at the proper angle, but also to prevent internal moisture settling thereon when covered with the glass. The end rafters should measure 3 by 4 inches; end and division bars, 1½ by 3 inches; ridge, 1½ by 7 inches, this being grooved in a line with the bed of the rafters to receive the top square of glass. The capping for the ridge must be 1 by 5 inches (bevelled off on both top sides); drip, 1 by 3 inches; door frames, 3 by 4 inches (the lintel being bevelled to prevent water lodging thereon), with oaken sills of the same size (height of door to be determined at the time of construction). The length of the rafters should be from 7 to 7½ feet; and a sunken pathway, 2 feet wide, should be provided along the centre of the house, in order to secure comfortable headroom therein. This will allow a space 4 feet wide on either side the pathway for standing the seedling plants on, after it has received a surfacing of sifted coal-ashes a few inches thick on the top of cinders or coarse gravel as drainage material. The rafters should be secured to the plates and ridge at intervals of 18 inches, nine rafters (including the two end ones) being required for a house 12 feet long. Two ventilators, 3 feet long and 19 inches wide, should be fixed in the roof, one on either side. Twenty-one ounce glass, in panes 18 inches wide and 20 inches long, should be used. This length includes an allowance for ¼-inch over lap, and extension of lower pane 1 inch on the drip board. Three squares will thus be required to glaze each pair of rafters; 54 panes in all. The glass should be bedded in best white lead putty, and be secured in addition with four brass brads to each pane, so fixed as to allow room for the expansion of the glass. In the 54 panes estimated for the roof are included four squares for the two ventilators. The woodwork should receive two coats of good white-lead paint before being fixed, and one more when erected. The cost of constructing such a house would be about £9. Either the "Loughborough," the "Ipswich" heating apparatus, the "Invincible," or such-like vertical heating appliances, which can be built into the wall, and be fed from outside the house, will answer your purpose; the cost of heating, including two rows of 4-inch piping, will be about £6.

COPPER COLOURED BEECH: *M. S.* The tree has been injured by a fungus which causes root-rot. Expose some of the roots and remove a portion of the bark. If the white spawn of the fungus is found to be present under the bark, it is practically impossible to save the tree. The only chance is by exposing the roots around the base of the trunk, and mixing with the soil a dressing of equal quantities of quick-lime and sulphur.

CROCUS SPECIES: *Basil Levett.* We do not know the exact limit of the depth to which the corms may descend, or that certain sorts are in the habit of burying themselves deeper than others. Our experience in the matter is that those that remain the longest time without disturbance will be found to have the corms deepest in the earth. It frequently happens that the strongest and tallest growth and best flowers are produced from very deeply-planted (or buried) corms. As an instance it may be pointed out that it is quite a common experience in nursery gardens to find stray corms at a foot deep in the ground, these having been overlooked and subsequently turned in during the work of tilling the soil. Much the finest plants of single Snowdrops we have seen were growing in large clumps of exceptional vigour, with the roots at 15 inches deep. These remarks apply equally to Scillas, Leucoums, Muscarias, Chionodoxa, and many other genera. In the wild state many bulbous plants as the Lily, Vallota, Erythronium, Narcissus, and others are found at depths varying from 15 inches to 24 inches, and these conditions appear to increase the top growth. We cannot say definitely, however, that deep planting will prove to be a perfect cure for the breaking down of the flower stems by wind, but it may assist them to withstand wind of ordinary power. The better way, we think, for garden purposes is to provide a thin evergreen "carpet," such as is formed by a moss-like Saxifraga, or dwarf-growing Sedum, for such a "carpet," whilst giving support to the flower stems, will also keep them clean and will not in any way retard their growth.

CUCUMBER LEAVES DISEASED: *W. C.* The plants are affected with the spot disease, so often described in these columns. You should burn all traces of the diseased plants, otherwise it will spread rapidly. Spraying with liver of sulphur, ½ oz. to two gallons of water, will do much good. Next year do not cultivate Cucumbers and Melons in the house in which the disease has appeared. Caution.—Liver of sulphur turns paint black, therefore spray with due regard to the woodwork.

DENDROBIUM CHRYSANTHUM: *R. H., Jamaica.* Your fine specimen, with over 1,000 perfect flowers, is superior to any of which we can find record.

FAIRY RINGS: *W. S. & Sons.* The fungus is Tricholoma gambosum. To destroy them thoroughly soak the ground with a solution of sulphate of iron, 1 lb., dissolved in three gallons of water. Loosen the turf with a fork so that the liquid can enter it freely, and treat the grass with the solution well beyond the rings.

PINE SHOOTS EATEN: *S. H.* The damage has been caused by the Pine Beetle, Hylesinus piniperda. You must cut down all dead or dying trees, for it is in these that the pest breeds. Place some small brushwood about the plantation or larger branches of the trees, and allow any fallen trees to remain until the following May, when they should be barked, and the exposed grubs be destroyed. The brushwood and the smaller branches that are too small for barking should be burned.

GARDENERS' ADDRESS BOOK: *J. S.* Send particulars to the editors of the *Horticultural Directory and Year Book*, 12, Mitre Court Chambers, Fleet Street, London, E.C., and *The Garden Annual*, 17, Furnival Street, High Holborn, London.

GRAPES DISEASED: *H. S., Hatfield.* There is no fungus present on the Grapes to account for the shrivelling of the berries. The injury is probably due to some root trouble that should be attended to. The Tomato shows the black-stripe disease. This fungus first appears on the stem and afterwards infects the young fruits. Diseased plants should be removed, or the adjoining ones will become affected. Spraying is of no use after the fruits are formed.—*A. H. H.* Owing to the decayed condition of the berries, we were unable to determine if a harmful fungus was present, but the berries were similar in appearance to those sent by *H. S., Hatfield.* We should certainly advise the cleansing of the house with some suitable fungicide, such as weak carbolic acid in warm water. Above all, see that the roots are growing in such conditions that they can perform their functions properly.

GRUBS IN POTATOS, &c.: *W. G.* The insects you send are the Common Millepedes. Dress the land late in autumn with gas-lime, and allow it to remain fallow for some time. See p. 129 of the *Calendar of Garden Operations* for a note on and illustration of these pests. This book can be obtained from our publishing department, price 7½d., post free.

IVY LEAVES DYING. *A. D. W.* Drought is the primary cause of the trouble, and red spider has also injured the leaves, but the latter alone would not have killed the plants.

ONION MILDEW: *D. K. D.* The bulbs are badly affected with this disease, the work of a fungus, Peronospora Schleideni. Collect and burn all diseased leaves, and do not throw any of the parings of the outer scales on the rubbish heap; these must also be burned. Do not grow Onions on the same land again for three years, but select a dry and exposed position for them. In the early stages of the disease, its spread may be checked by dusting the plants with powdered quick lime and sulphur, using twice as much lime as sulphur.

NAMES OF FLOWERS AND FRUITS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at one time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.*—*J. L.* 4, Golden Spire; 4, Yorkshire Beauty; 6, Bedfordshire Foundling; 7, Keswick Codlin.—*Lady M.* 1, Jolly Beggar; 2, Duchess of Oldenburgh; 3, King of the Pippins; 4, Cox's Orange Pippin; 5, Cox's Pomona; 6, Kerry Pippin.—*U. S. A.* Your fruit is not recognised. It is of excellent culinary quality, and has a pretty appearance. When cooked it greatly resembles Wellington.—*G. E. F.* 1, Kentish Fillbasket; 2, Ord's Apple; 3, Cox's Pomona; 4, Lady Sudeley.—*Insignis.* Whorle Pippin or Lady Derby.—*A. D. Roe.* 1, Not recognised; 2, Emperor Alexander; 3, The Queen; 4, American Mother; 5, Old Nonpareil; 6, Cox's Orange Pippin.—*Correspondent.* No letter. Fruits in an Ogden's cigarette box. 1, not recognised; 2, a small fruit of Worcester Pearmain.

NAMES OF PLANTS, *C. H. P.* Clematis brevicaudata. *W. C. M.* 1 and 2 send when in flower. 3, Colutea arborescens, the Bladder Senna. *A. M., Gateshead.* 1, Pulmonaria officinalis; 2, Saponaria officinalis (double-flowered variety).—*K. H., Hampstead.* Alnus glutinosa, the common Alder.—*A. M.* 1, Hemigraphis colorata; 2, Episcia cupreata; 3, Pellionia pulchra; 4, Cunninghamia cordifolia; 5, Senecio suaveolens; 6, Helenium Bigelowii.—*W. E. P.* 2, Teucrium fruticans.—*L. Wingate.* Sneda fruticosa.—*S. H. M.* The plant is properly named Eriogonum racemosum.—*Sam.* The leaf appears to be that of Ginkgo biloba (Salisburia adiantifolia), which is known as the "Maidenhair tree." Ascertain where the wood forming the post was obtained from, and if it has made roots. The flower is that of a species of Primula, but which species cannot be determined from such a specimen.—*H. M.* Solanum rostratum.—*F. T.* 1, Euonymus radicans variegata; 2, Cerastium tomentosum; 3, Achillea Ptarmica flore-pleno; 4, Lilium speciosum (lancifolium); 5, Monarda didyma; 6, Asperula odorata, Sweet Woodruffe.—*G. P.* Iris japonica (fimbriata). Requires to be potted in sandy loam.—*J. W. B.* 1, Cattleya Eldorado; 2, Cattleya Gaskelliana.—*H. M. V.* 1, Odontoglossum Lindleyanum; 2, Odontoglossum Wallisii; 3, Masdevallia militica; 4, Cochlioda Noezliana; 5, Pleurothallis Roezlii; 6, Brassia brachiata.—*W. J. H.* Cymbidium ensifolium.—*C. B.* 1, Adiantum trapeziforme; 2, Adiantum sulphureum; 3, Asplenium lucidum; 4, Selaginella Wildenowii; 5, Pteris hastata.—*M. H. L.* 1, Rudbeckia speciosa; 2, Tradescantia virginica; 3, Erigeron speciosum.—*H. S.* Saponaria officinalis, double-flowered variety.—*E. Y.* Caryopteris Mastacanthus.—*J. S.* We cannot name the specimen from the leaf only.—*J. W., Glasgow.* Cyclanthera explodens.

FIG. 98.—A POTATO PIERCED BY COUCH-GRASS.

POTATO TUBER PIERCED BY COUCH GRASS. *J. B.* Thanks for sending the specimen. We reproduce an illustration at fig. 98 of a similar case. The shoots of the grass are said to secrete a juice which softens the tissues of the Potato tubers, and thus facilitates the growth of the grass.

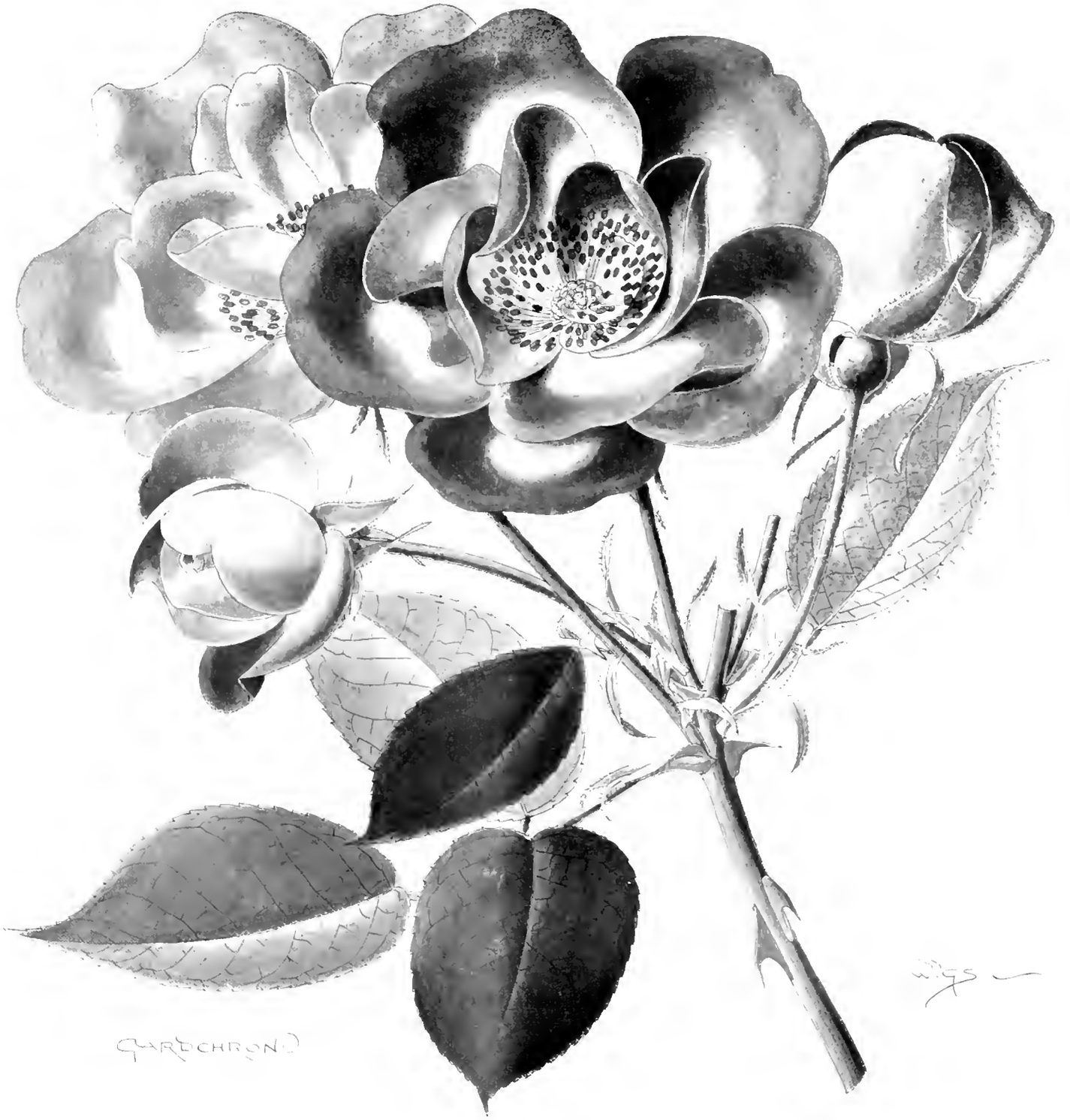
PEACH AND NECTARINE ON THE SAME BRANCH. *H. M.* We have previously received examples of these fruits growing on the same shoot, this is not to be wondered at, for there is no difference botanically between the Peach and Nectarine. In our issue for August 2, 1902, p. 70, there appeared an article on the subject with illustrations, one of which shows a fruit that is partly a Peach and partly a Nectarine.

POTATOS DISEASED. *E. E. M.* The tubers are affected with the black scab or warty disease. This is the work of a fungus, Œdomyces leproides, consequently you must destroy all diseased portions of the Potatos by burning, and be careful not to plant Potatos in the same soil for several seasons. Powdered sulphur mixed with the soil when the "sets" are planted will act as a corrective. See article with illustration of this and other diseases of the Potato published in the *Gardeners' Chronicle*, April 23, 1904, p. 257.

TEMPORARY TREATMENT OF FOUR ACRES OF LAND: *Inquirer.* If conveniently lying for the purpose of a garden the land might be formed into a square or an oblong, and be bounded with a wire fence (which need not be higher than 3 feet) so as to exclude rabbits and hares, and then a road, not necessarily metalled or gravelled, should be staked out about 20 feet distant from the fence, this roadway being made 8 feet in width to allow of a cart passing along it. The soil thus removed may be thrown on to the land between the road and the fence, thus making a slightly sloping border, very suitable for dwarf-growing plants, whether for decorative purposes or economic use. That done, the rest of the land may be divided into sections of rather less than one acre; footpaths, 5 feet wide, being arranged and planted on either side with fruit trees, preferably pyramids, or bushes of Apples on Paradise stocks, Pears on the Quince, and Plums as bushes, and as the number of these must be limited they may stand at 20 feet apart. The loss would not be great when portions of the land are taken for building purposes, because the fruit trees could then be moved to another site. There will thus be four pieces of land divided from each other by a path of the above-named width, so that there will be a path running, say, from north to south and one from east to west. At each angle a plot of 20 feet in width may be reserved for tall Dahlias of the Cactus and decorative types, Hollyhocks, the finest Sweet Peas, Rosa Wichuriana, and hybrids from this species, Perennial Asters, &c. Across the paths, at widely distant points, arches for climbing (Rambler) Roses may be constructed, peeled Oak branches to be employed in preference to iron for the making of these arches. The walks may be bordered with a line of Sage, Thymes in variety, Pot-Marjoram, Parsley, broad-leaved Sorrel, single and double flowered Violets, Primroses, Polyanthus, and behind these lines Narcissus in variety, Crocus, Anemones, Wallflowers in variety, intermediate and 10-week Stocks, Lunaria biennis, and many other annual and biennial plants that can be easily raised from seed may be planted. The main areas in the quarters may be cropped with early and mid-season Potatos, Cauliflowers, French Beans, Lettuces, Seakale, Asparagus, early and late varieties of Strawberries, Broccolis, Cabbages (not many of these), Cottagers' Kale, and Peas. Of flowering plants Montbretias, Gladiolus, Pæonies, summer-flowering Asters, also the perennial species and varieties, shrubby Phloxes, Gaillardias, and Sweet Peas should be grown in quantity, also the finer varieties of Mignonette, and many other plants that can be quickly raised from seeds and cuttings, and which would find a ready sale if not required at home. It should not be forgotten that some amount of levelling may have to be done first of all, and draining, if the land does not overlay a gravelly subsoil, or if it lies in a valley or depression. It may be necessary to trench a portion of the soil yearly until the whole has been done, but for the first year deep digging or bastard trenching would suffice after dressing it heavily with stable dung. Special manures might be applied to certain crops, during the season of growth, with advantage. Without some knowledge of the ground in question we are unable to afford more precise information.

COMMUNICATIONS RECEIVED.—T. J. M.—A. G.—Devon—J. R.—G. Pyne (with thanks)—W. H. H.—W. T. F.—Pinehurst—T. H. B.—Constant Reader—T. A. F.—X. Y. Z.—E. P. (the photographs are under consideration)—C. Groves—E. M.—F. M.—W. A. C.—W. H.—H. H., Darmstadt—J. O'B.—E. J.—De B. Crawshay—S. A.—H. W. W.—W. J. G. (many thanks)—H. R.—Roamer—W. W.—A. L.—W. H.—R. J. A.—D. R. McKay (many thanks)—G. Arflam—F. C. G.—J. Mayne—M., Dover—W. H. G.—G. C.—G. H.—R. M. L.—G. C.—G. H. J. D. C.—A. R.—J. C.—W. D. (with thanks)—J. D. C.—J. U.—W. M.

For Market and Weather Reports see page xii.



Rose Gottfried Keller [Austrian Briar × Tea Variety]. Colour of flowers rose-pink, with yellow centre.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,032.—SATURDAY, October 6, 1906.

CONTENTS.

ILLUSTRATIONS.

ROYAL LILY NURSERY, DERSINGHAM.

AS an example of specialised culture begun in quite a small way, the nursery of Mr. T. Jannoch is remarkable in several directions. It was established ostensibly for the cultivation of Lily of the Valley, and the supply of roots, flowering plants, and blooms for cutting. The material supplied to the public, and to members of the trade, commanded great approbation from the first, and the proprietor soon became favourably known as a cultivator and forcer of, and an authority of repute on, Lily of the Valley.

Up to that date, now nearly 30 years ago, Lily culture in nurseries and private gardens was but little understood or practised, and the special production of flowering crowns by sorting out the one, two, and three year old crowns (buds) was scarcely known or thought of as being essential by the cultivators of the home-grown plants. At that period the late Mr. Herbst, of Richmond, and Mr. Iceton, then of Barnes, were the better known dealers in Lily of the Valley; and these men were forcers of roots—not growers—in the ordinary sense of the term. The supply of clumps and crowns came from the Continent. Mr. Jannoch was the first to show us how easy it is to cultivate the plant under suitable conditions in this country, and since that time others have followed in his footsteps; but owing chiefly to the dearness of labour, special cultivation of the plant has not made much progress, with the result that the Continental cultivators furnish the major proportion of crowns and clumps forced at the present day. The two methods—retarding in a freezing chamber and etherisation—are employed in the production of Lily of the Valley flowers during, practically, the whole year. Retarded Lily of the Valley can be had in bloom at any time during the autumn and summer months, and they will open their "bells" and develop fine foliage in the course of two or three weeks in a cold frame or a greenhouse, and even in a living-room they will come to perfection. After October, however, more heat is required from week to week, otherwise success is less certain; and the flowers are weak and stunted, and being too long in opening, many of the flower buds become yellow and finally drop off. The plants require no bottom heat before October, and in no case afterwards should the bottom heat be more than 75° Fahr.

Lilacs.

Of late years Lily of the Valley cultivation at Dersingham has given way to that of Lilacs, of which M. Lemoine's fine varieties form the bulk of those grown. Of single-flowered varieties there are about 50 of the best; and of double-flowered about the same number of varieties. The mother plants are grown in the ground in lines by the sides of the walks, forming a magnificent display when in bloom. The whole of the saleable stock of these plants is grown as potted plants fit for forcing or for planting out.

The largest of these are in small tubs 1 foot and 1½ feet in diameter, and in 8 and 10 inch pots; the biggest plants are furnished with from 25 to 35 shoots apiece, and strong, fat buds that are sure to throw four flower spikes on each shoot, giving a grand display when forced. All blind and weak shoots are carefully removed several times during the season of growth so that the strength of the plant is confined to the main shoots, hence the great size of the spikes and flowers, and the flowering shoots in general measure from 1½ to 2 feet in length, and are of great strength furnished with large, leathery leaves of a dark-green tint, when the flowers are dark-coloured and of a lighter tint in white and pale coloured varieties. It often occurs that triple terminal buds appear, and the centre bud is removed by hand in July if nature has omitted to suppress it.

Many, and indeed most, of the older plants are worked on stems of seedling Syringa vulgaris, 1½ to 2 feet in height. The second sizes of plants observed are standing in pots of 8 to 10 inches in diameter, and they are furnished with six to eight heads each, with 1½ to 2 feet stems. It is of the greatest consequence that a Lilac plant for forcing purposes should have the shoots well matured, and this can only be assured by full exposure to light and air, and with this intent the plants are plunged to three-quarters the depth of the pots, and are never top dressed with either soil or manure, although during the season of growth manure water is occasionally afforded. They are stood at 3 feet apart in the lines, with 2 feet spaces between the lines, there being three lines in a bed; smaller plants on 1 foot to 1½ feet stems are placed at 2 feet and 2½ feet apart. These plants looked very promising for bloom, and were showing from five to seven shoots per plant. Their ages ranged from three to four years. In every case the plants, after having bloomed, have the last season's growth cut back to within 3 to 4 inches of the base.

With the exception of two beds of 50 yards in length holding the largest plants, all the other portion of the stock stands on the soil, and thus secures perfect ripening, and there is complete control over the application of water, each plant getting what it needs, and that only. Continental cultivators invariably sink the pots deeply and mould them over, thus inducing roots to grow over the rim, which have to be removed on taking them out of the soil.

Miniature Lilacs.

These beautiful objects for room decoration, for the dinner table, and general greenhouse display were noted in considerable numbers, growing in 5-inch pots, and reaching a height of only 1½ feet, possessing four, five and six shoots, each furnished with two or more flower buds. These plants are plunged in the soil up to the rim of the pot at 9 inches apart.

There were several successions intended for flowering in succeeding years. The plants are never repotted. Miniature plants under ordinary conditions will keep in good bloom from three to five weeks.

Contrary to all practice, plants are taken from pots or the open ground, all the soil shaken from the roots, at once dipped into a thick mixture of cow-dung and water, and potted forthwith. This is carried out in the month of July, and the plants are stood in the full sun without wilting or the loss of a leaf.

Budding of Stocks.

This is an operation which is preferred by Mr. Jannoch, although at the start a year is lost as compared with the results obtained by grafting, but the ensuing growth is much stronger, as may be noticed in Peaches, Pears, etc., and at the first cutting back a strong bud of shoots is secured, much more so than from grafted plants.

Budding is commenced in July, and continued throughout August. The plants, according to the height at which the stocks are budded as dwarf bush, and to form quarter, half, and full standards, and miniature plants.

Remarks on Varieties.

The best white Lilac is considered to be Frau b. Dammann; it is single flowered, has very large spikes; Grand Duke Constantine has greyish-blue flowers, and is one of the finest doubles; the colour is that of the Marie Louise Violet. Belonging to the same class are Madame Abel Chatenay, a very beautiful, white flower; Mad. Casimir Perier, a quite new variety, white, and excellent for forcing; Mad. Lemoine, white, a large spike; Michel Buchner, pale lilac, a dwarf-growing plant; President Grévy, a very double, blue-tinted variety, with a long spike; President Carnot, large pale lilac spike, and free to flower; pyramidalis, large and dense spike of a fine mauve colour; Alphonse Lavallee, with very large spikes of blue shaded violet; and Charles Joly, a dark purple, one of the finest of the dark-coloured varieties. These mentioned force well whether retarded or not, and are fine out-of-doors objects in the garden.

Equally excellent in the same way are the following single-flowered varieties:—Charles X., a strong grower, in several shades of lilac, and one of the best for forcing; Claude Lorraine, very large spikes of a deep lilac tint; Madame Francisque Morel; Marie Legraye, large white spikes, forcing well; Reaumur, carmine, flowers of satiny texture, spike very large; Rouge de Marly, reddish-purple; Rouge de Trianon, very large spikes, the individual flowers large, and of a reddish-blue colour; Souvenir de Louis Spath, dark purple, flowers large, the finest of its colour; Ville de Troyes, dark purple, a fine variety.

A few other items may be named of which good stocks were noted of Cyclamens, Begonia semperflorens in variety; Phyllocactus Deutsche Kaiserin, a beautiful variety having pink flowers freely produced, which last a long time in perfection; "Malmaison" Carnations, Asparagus in all the well-known varieties and species; Violets, both double and single flowered; Hydrangeas in varieties, and numerous species of trees and shrubs for forcing, &c.

RETARDATION OF GROWTH BY MEANS OF COLD.

The action of continued cold upon plants is to keep in check, in actual suspension, the natural tendency of plants to grow at root and top in spring, and this suspension of the vital power may be prolonged from January to June, and probably for a much longer period. The application of the cold process is to a certain extent combined with a certain cost. By the cold process Lily of the Valley, Lilac, various species of Lilium, Hydrangeas, Ghent and Mollis Azaleas, Gueldres Rose, Prunus of species, Philadelphus hybridus Lemoinei, &c., may be kept till any period late in the year, and they will bloom just as well and as certainly as non-retarded plants: Lily of the Valley in about three weeks and Lilacs in about the same time.

ETHERISATION

produces a change in plants that causes them to grow more quickly and open the flowers sooner when they are put into warmth. It is applied in autumn and winter to plants that have not had their usual length of rest. The inventor of the original process was Dr. Johannsen. Ether causes the sleep or repose to be far deeper, and according to the duration and density the more easy and rapid is their recovery. The effect of ether or chloroform vapour is supposed to be due to the drying up of the food juices in the stems and bases of the buds. Before a selected plant is put into the ether-chamber, the soil, stems and foliage are thoroughly dried, so much as to be productive of a certain degree of withering. The ether is applied by being poured into a shallow vessel through a short length of pipe inserted in the centre of the arched roof of the etherising chamber, after the door has been hermetically closed; the fumes, being heavier than air, fall down among the plants standing on the floor. The ether is applied in most instances twice in 48 hours, a 12 hours' interval being afforded with the door opened. Not all species of plants require two doses. *L. M.*

PLANT PORTRAITS.

[illegible] *Kew Bulletin*, September 16, 1906.

[illegible] *Kew Bulletin*, September 16. [illegible] *Garden*, Oct. [illegible] 5.

NEW OR NOTEWORTHY PLANTS.

DEUTZIA MOLLIS, DUTHIE, N. SP.*

This very distinct and beautiful species was discovered by Mr. E. H. Wilson in the Hupeh district of Central China, growing on cliffs (Nos. 1,917, 1,959, and 2,282a). It was raised by Messrs. Veitch & Sons at Coombe Wood, and flowered for the first time in this country during the summer of last year. In the shape of its leaves and in its rather flat corymbose panicles it resembles some of the forms of D. parviflora Bunge, but it can at once be distinguished by the softly pubescent under-surface of the leaves, and by the wings of the filaments not being toothed. The flowers are white, or sometimes with a tinge of pink.

DEUTZIA GLOBOSA, DUTHIE, N. SP.†

This species was raised by Messrs. J. Veitch and Sons from seeds collected by Mr. E. H. Wilson in W. Hupeh in Central China. It flowered for the first time in this country during the summer of 1905. The flowers, which are arranged in dense globose panicles, are medium-sized and of a creamy white colour. It differs from D. Vilmorini in its cup-shaped corolla, and from D. Wilsoni in the longer and narrower calyx-segments. The wings of the petaloid filaments are not produced at their apex.

DEUTZIA RUBENS, DUTHIE, N. SP.‡

This species was discovered by Mr. E. H. Wilson in Central China, and was raised by Messrs. Veitch and Sons in their nursery at Coombe Wood. It flowered for the first time in this country during the summer of last year. It is a small and somewhat slender-growing shrub with greyish bark and narrowly lanceolate serrate leaves. The flowers, which are pure white, are borne on slender pedicles and arranged in corymbose panicles. It differs from D. Wilsoni in its much narrower calyx segments, and from all previously described species by the reflexed lateral margins of its petals.

* DEUTZIA MOLLIS, *Duthie*. Frutex 9-24 dm. altus [illegible] glabris [illegible] rubro-brunnei [illegible] dense hispidulis. Folia petiolata absque petiolo 5-10 cm. longa et 2·5-5·5 cm. lata, elliptico-lanceolata [illegible] oblique et obtuse acuminata basi rotundata [illegible] utrinque pilis et squamis minutis stellatis [illegible] supra aspera, subtus pallidula densi et molliter [illegible] costam venasque [illegible] serratis, dentium apicibus callosis [illegible] 4-6; petiolo circa 6 mm. longo supra profunde [illegible]. Paniculae breves, laxe corymbosae [illegible] compositae, ramulis calycibusque dense hispidulis [illegible] stellatis obsitis. Flores 8-10 mm. diametro, albi vel pallide rubri. Calycis lobi breves [illegible] patentes [illegible]. Petala 5 mm. longa, sub-[illegible] extra stellato-pubescentia. Stamina alterna breviora sursum sensim attenuata, [illegible]. Styli tres [illegible] stamina longiora aequantes. Capsula matura subglobosa [illegible] mm. diam., hispidula et squamis stellatis dense induta.

† DEUTZIA GLOBOSA, *Duthie*. Frutex, cortice rubro-brunneo [illegible] breviter petiolata, 5-9 cm. longa, ovato-lanceolata [illegible] obtuse acuminata, basi cuneata, marginibus [illegible] denticulatis, supra scabrida, subtus pallida, costa [illegible] pilosis, petiolo 6-8 mm. longo. Flores in paniculis densas patentes globosas dispositi, luteo-albidi; bracteae lineares, pedicellis [illegible] breviores. Calyx 7 mm. longus, tubo hemisphaerico, lobis tubum aequantibus [illegible] triangularibus, demum reflexis. Corolla 15 mm. diam. [illegible] cyathiformis, petalis apice cucullatis, marginibus [illegible]. Stamina petaloidea alterna breviora, longiorum alis abrupte angulatis, haud productis; antheris [illegible]. Styli tres, infra medium haud [illegible]. Capsula 4 mm. longa, subglobosa, squamis stellatis dense obsita.

‡ DEUTZIA RUBENS, *Duthie*. Frutex parvus [illegible] gracilibus, cortice brunneo-cinereo [illegible] deciduo. Folia 5-6·5 cm. longa, 2-2·5 lata, anguste elliptico-lanceolata, acuminata, [illegible] stellatis [illegible] pallida, marginibus [illegible] costa venisque infra valde prominentibus, petiolis [illegible] 7 mm. longis, supra profunde canaliculatis. [illegible] 15 mm. in paniculis [illegible] dispositi, [illegible] squamis stellatis obsitis; bracteis 10-13 mm. longis, lineari-lanceolatis, persistentibus [illegible] marginibus [illegible] calycis tubus hemisphaericus, lobis circa 3 mm. longis [illegible] triangulari-lanceolatis, primum erectis, demum patentibus. Petala 6 mm. longa, ovato-oblonga, extra pubescentia, apice cucullata, marginibus lateralibus reflexis. Stamina petaloidea, alterna breviora, [illegible] apice abrupte angulata [illegible] antheris [illegible]. Capsula [illegible] 5 mm. diametro, sparse squamis stellatis [illegible].

THE FLOWER GARDENING AT HAMPTON COURT.

THE long herbaceous border on either side of the Palace facing east of the pleasure ground was looking remarkably well on September 12. I have seen the same annually for a number of years, but it has never before appeared to me so beautiful at this season of the year. The disposition and arrangements of the plants, and the grouping and harmony of colours, leave little or nothing to be desired. In addition to the usual autumnal occupants of such a border, a few specimen plants have been introduced here and there which are little cultivated now, but, though not so gorgeous in colour as the bulk of the plants in bloom, arrest attention and afford pleasure by their quaint habit of growth or curiously coloured flowers. Such a plant was the old "Mina lobata," its pendent yellow flowers and its Ipomœa-like growth contrasting pleasingly with the more formal and familiar flowers. The Coleus, grown ordinarily for its foliage alone, has beauty added to it by its long flower scapes of feathery blue, and helps to add a charm to this border. Here also are introduced patches of white Bouvardias growing luxuriantly and bearing a profusion of bloom. A happy use is also made of the single annual Aster—a flower of the most artistic form and delightful shades of colouring. I saw a little front garden of a small cottage on the Bath road near Slough planted wholly with this Aster last year. It appealed to me as being the prettiest little garden picture I had seen for a long time.

I have one fault to find with this fine border at Hampton Court, and that is the poor way in which the wall at the back of it is furnished with climbing plants. This is not so apparent now; but in the spring the bareness of this wall is painfully conspicuous. The effective covering of such a wall, I know, is attended with many difficulties, the crowded condition of the border during summer being a bar to successful growth. Still, I think something might be done to improve matters in this respect. For instance, the beauty of even this fine border might be enhanced by the introduction of masses of Clematis at short intervals on the face and top of the wall. The rich and glowing colours of the best varieties of these would add a brilliancy and charm of colouring to the whole, and the stems of the Clematis growing against the wall would occupy but little space.

The bed which took my fancy most was a long one with square ends planted with columnar trained plants of Streptosolen Jamesonii and Calceolaria Burbidgei alternately, having liberal and adequate spaces between, admitting full development of each plant. This bed was carpeted between the columnar plants with Verbena Miss Willmott, and edged with golden coloured Pelargoniums. Each column was clothed with splendid foliage and a profusion of bloom, and measured from 5 feet to 5½ feet high. Again I am inclined to be critical: the edging was not worthy of the bed. Had a bold margin of Centaurea candidissimus, or a broad band of Iresine Herbstii been substituted a lovely harmony of colouring in gold, orange, and white, or in gold, orange, or deep bronzy crimson, would have resulted. Each column is formed of five plants, each about 4 feet high when planted out. They are planted round a circle about a foot in diameter. I have seen those when planted out in June, and poor starveling looking things they then appeared, having of necessity been crowded close together under glass during the winter and spring, but the transformation in a few weeks when planted in well enriched and well prepared soil is simply magical. The plants break into growth from base to top, and, as already mentioned, become during the summer pillars of dense foliage and lovely bloom. There is one other matter which pleased me much. I

refer to the hybrid Water Lilies growing in the large basin of the ornamental fountain facing the east front of the Palace. I have observed these for the last two or three summers, and I had an impression that the plants flowered more profusely in this position than I have ever seen them flower anywhere else, and having again seen them this year I am confirmed in the correctness of that impression. The flowers are not so large, but they are more numerous, and I think the colours are brighter and more intense. It is a hot, sunny spot where they grow, and perhaps this extra brightness in colouring may be the result of the abundance of light and heat to which they are exposed. I think there is a lesson to be learned in the successful growth of this plant from the floriferous condition of these Nymphæas, and also from the limited leaf growth they make. It is that they flower more freely when confined to a comparatively limited root space, as these are, rather than when given unlimited room to grow in, as is frequently the case, when the energies of the plant are expended in the growth of leaves at the expense of flowers. But these beautiful Lilies should have more conspicuous labels attached to them; some of them are a good way from the edge of the basin, and I had to invoke the help of younger eyes than my own to find out their names. *O. T.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM × EUPHROSYNE.
(Sceptrum × Crispo-Harryanum).

This is another hybrid from the Uccle establishment of MM. A. A. Peeters et fils, raised by M. F. Peeters, who sent me the two first varieties of it that bloomed. It is not one of the great surprises or wonders we get so used to seeing in these days of great progress in Odontoglossum raising, but is a very pretty thing nevertheless, and when grown into strong plants will be a very useful and decorative form, though not of any high value. The ground colour of both sepals and petals is a lighter yellow than is a good Sceptrum, which is heavily marked by brown blotches separated by 2-inch bars of yellow, as in Sceptrum.

The colour section of the petals is similar, but with more evidence of the crispo-Harryanum tint of violet in the frond. The principal blotch is at two-thirds distance from the base, and is encircled by spots which form a line from the base all round the margin, being connected across the petal at one-third length from base. The lip is of Sceptrum form, with the frill almost absent, as would be expected from the influence of the hard outer edge of crispo-Harryanum. It is pale cream white, with a small blotch in front of the crest. This latter is very reduced from that of Sceptrum. The form generally of the bloom is that of Sceptrum somewhat elongated, that gives a look of crispo-Harryanum to it, from which and its substance there is no doubt as to its identity to even an ordinary observer. *D. B. Crawshay.*

BULBOPHYLLUM GRANDIFLORUM.

This large and singularly-formed species when grown into a strong specimen is a very striking object. Although the flowers are not showy, they are very attractive. A fine example of it in the Hon. Walter Rothschild's collection, Tring Park (gr. Mr. A. Dye), has seven flowers, each over 6 inches at the greatest width. The flowers are pale-green reticulated with sepia-brown, the dorsal sepal, which is concave and projected forward, being 4 inches in length by 2 inches in width; the narrow lateral sepals are curved downward. Its nearest ally, B. longisepalum, which was lately in flower at Tring Park, has narrower flowers heavily marked with reddish purple. The B. Ericssoni (January 23, 1897) and Cirrhopetalum Rothschildianum (November 23, 1905), both of which supplied the material for the illustrations in the *Gardeners' Chronicle*, are thriving well, and B. virescens, and a large number of other species, are in excellent condition.

CYPRIPEDIUM FAIRRIEANUM.

When announcing the arrival of an importation of this pretty Cypripedium we suggested that it should be tried in a cool house, as the few plants previously in gardens seemed to have been killed by being kept too warm. The experiment was tried by J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), the greater number of his plants being placed with the C. insigne varieties, which several are now in bloom, and all with sturdy foliage, equal in vigour to the specimens of C. insigne. One of the best plants was allowed to remain in the warmest Cypripedium house, and this is not nearly so vigorous or healthy-looking.

In this collection the unique Cypripedium Leeanum J. Gurney Fowler is thriving; two fine plants of C. I'Ansoni; the handsome C. callosum Rothschildianum, which obtained a First-Class Certificate at Holland House; good examples of C. Miss Louisa Fowler; a fine C. Maudiae, the graceful C. Bella Westfield variety; C. Lawrenceanum Hyeanum and a fine collection of other rare Cypripediums are in splendid condition, some of them being in flower.

CATTLEYA CHAMBERLAINIANA
(Leopoldii × Dowiana).

A very fine example of this beautiful hybrid, which was originally raised and flowered by Messrs. Jas. Veitch & Sons [illegible], is flowering in the collection of J. Gurney Fowler, Esq. It has the general aspect of the favourite C. Iris, and considering that it was first raised and flowered a quarter of a century ago, it is noteworthy as still retaining its place in the front rank of hybrids of its class. The inflorescence bears several fine flowers, each 5 inches across, the sepals and petals of a coppery-orange tint flushed with rose, and the large labellum bright claret-purple.

There is a fine collection of hybrid Cattleyas, Lælio-Cattleyas, Brasso-Cattleyas, &c., at Glebelands, and all in fine health; among those in bloom being the new Lælio-Cattleya Woodfordiensis, L.-C. Clonia superba, Lælia Iona ig-[illegible], a beautiful and fine-coloured flower, Cattleya Iris, and many others.

The large collection of fine varieties of Cattleya Schröderæ, which flowered so profusely last year, promises to be still finer this season, the plants having from six to twelve flower sheaths.

FRUIT REGISTER.

MILLER'S SEEDLING APPLE.

This comparatively unknown early dessert Apple is certainly one of the very best of its section in cultivation. It presumably originated in the neighbourhood of Newbury, Berks., and in that district it is largely grown, and has a very high local reputation. It is one of the misfortunes of this Apple that it got into circulation quietly and without the customary trade booming, hence we have heard so little of it. I have seen it fruiting finely at Maiden Erlegh, Reading, in Mr. Turton's time, and at Highclere Castle, and Lockinge. In the latter garden it this year fruited splendidly, and the sample of fruit seemed almost unequalled for beauty of form and delicacy of colouring. Mr. Fife speaks highly of it. The fruits have the merit of keeping sound, juicy, and crisp for a month, which some other praised early Apples have not. The tree is of moderately strong growth and is a regular fruiter. It is odd that so good an Apple—outwards at least—should be so little known generally, yet there are growers at Wantage who have crops from this variety by the ton. It is ready to gather at the end of August. *A. D.*

Fig. 99.—Apple Miller's Seedling.
(See text, also description, published in last issue, page 235.)

NEW ZEALAND PLANTS.

THE CHATHAM ISLANDS.

The following extract is made from an interesting article by Dr. L. Cockayne, recently published in the *Auckland Star* (New Zealand) —

"Sailing from this interesting but most desolate group of islands, at a distance of about 500 miles from the coast of New Zealand, and almost due east from Lyttelton, the Chathams are encountered. This group has a flora quite as interesting as its subantarctic sisters, but of a different character. Subalpine meadows, fields of herbaceous plants, 'rata' forests—all these are absent. A forest of another character flourishes, distinct, too, from any other of New Zealand. The trees have a very familiar appearance, they look old friends, but are different somewhat. Surely this is the well-known 'Koromiko,' but never did one see that as a tree 50 feet in height. Here is the Lancewood, but where is the well-known juvenile form? Here, too, the Korokia of the north, still its leaves seem larger and its yellow fruits bigger. The truth is that long isolation from the mainland has led to slight differences between many Chatham Islands and New Zealand plants. They have certainly come from a parent stock, perhaps one or the other is the actual parent, but now, although closely related, they are for the most part distinct species. The Lancewood is neither Pseudopanax crassifolia or P. ferox; it is P. chathamica. The Koromiko is not Veronica salicifolia; it is V. gigantea; while the Korokia is named Corokia macrocarpa, and is distinct from C. buddleioides of the North Island.

"The commonest of all the forest trees is the Karaka, but here called Kopi (Corynocarpus laevigata), whose smooth bark was frequently adorned with the figure of a three-fingered man by the Moriori artists. Then come the Matipo (Suttonia chathamica), the Mahoe (Hymenanthera chathamica), an indigenous Daisy tree (Olearia Traversii), the tree-Karamu (Coprosma chathamica), the Lancewood (Pseudopanax chathamica), the Ribbonwood (Plagianthus chathamica), the Nikau (either Rhopalostylis sapida or Baneri). There are two distinct classes of forest on the island, that on the higher ground containing fewer species and having the large Heath, Dracophyllum arboreum, as its dominant tree.

"There is no shrubby undergrowth, but tree-Ferns and Ferns of all kinds are very abundant. The only lianes are the Supplejack, the climbing Convolvulus, and Muehlenbeckia australis. Many most characteristic New Zealand forest trees are quite absent, e.g., all the Taxads, the Beeches, the Palm-Lily, and the Pittosporums.

"The despair of the settler and the delight of the flower lover are the very numerous bogs of the Chatham Islands. These are frequently occupied by a close growth of the Chatham Island Aster (Olearia semidentata), a truly lovely shrub in every respect. Covered in the summer time with flower heads of the most intense purple, these Olearia shrubberies are an entrancing spectacle. Olearia chathamica is not so common, but occurs in quantity on the summits of those precipitous cliffs forming the south coast of Chatham Island; its flowers are white. Growing in company with O. semidentata is Dracophyllum paludosum, a needle-leaved shrub 3 or 4 feet tall, but which, when growing on sphagnum, sometimes blooms when only an inch or two high.

"In the neighbourhood of these Olearia bogs, the margin of the forest often consists entirely of the Rautini (Senecio Huntii), a magnificent tree-groundsel, which produces immense bunches of yellow flower-heads. For many hundreds of yards at a time this belt extends, and when covered with its golden blossoms forms a gorgeous mass of colour.

"On the dry, open ground, a Heath 'society' occurs, in which the rounded bushes of Styphelia robusta, covered in the autumn with white or red "berries," are conspicuous. Here, too, is the Australian Styphelia Richei, which, strange to say, does not occur in New Zealand proper.

"The most famous of all the Chatham Island plants is the giant Forget-me-Not Myosotidium nobile, frequently called by the absurd name of Chatham Island Lily, or, what is worse, Macquarie Cabbage. This wonderful plant, found nowhere else in the world, is now almost extinct. Formerly it formed a broad belt on the seashore, just above where the dry Seaweed marks the high-tide limit, extending almost round the main island. The massive, shining, broad, green leaf-blades, a foot or more in length, raised high from the ground on stout leaf-stalks, and the numerous blue flowers, each half an inch or so in diameter, render this plant a most conspicuous object. The seeds germinate rapidly if fresh, and seedlings are raised with the greatest ease. The writer has long thought this noble plant might easily be naturalised on our northern seashores—for instance, on the Little Barrier Island and on Kapiti. Also, surely some effort could be made to fence a piece of the Chatham Island shore from sheep and pigs, so that it could once more reassert itself in its natural station.

"Other interesting Chatham Island plants are:—The Mutton-Bird plant (Cotula Featherstonii), which grows only near the holes of the petrels; the shrubby Speedwells, Veronica Dieffenbachii, V. Barkeri, and V. chathamica, this latter a charming little plant, which creeps over rocks close to the sea; the great Sowthistle, Sonchus grandifolius; the Bog Grass, Poa chathamica, an important fodder plant; the Chatham Island Cranesbill, Geranium chathamicum, of which there are white and pink varieties; the Swamp Matipo, Suttonia Coxii; the Gentian, Gentiana chathamica, and two Spear-Grasses, Aciphylla Dieffenbachii and A. Traversii.

"Settlement has, in many places, quite changed the face of the country. In some places are fine Grass paddocks; in others the Bracken Fern has become a weed. Phormium was originally very common, but is now a thing of the past in most cases.

THE KERMADECS.

"Science is especially indebted to Mr. T. F. Cheeseman, F.L.S., for a knowledge of the most northern members of the New Zealand biological region, the Kermadec Islands. The following account is based on Mr. Cheeseman's admirable paper on the subject published in 1888.

"From the subantarctic islands to the subtropical Kermadecs is a long step, and yet the dominant tree in this latter is also a Metrosideros (M. villosa), a relation, however, of the Pohutukawa, and not of the southern rata. But with this the similarity between the two regions ends, and there is no more any outward resemblance between the plant-forms than there is between the climates.

"As seen from the sea, there is nothing in the appearance of the plant-covering of the Kermadecs to recall the tropics. No featherly Cocoanut Palms fringe the shore. On the contrary, the rather dull hue of the New Zealand foliage, as seen from a distance, is everywhere manifest.

"Sunday Island, the largest of the group, is forest-clad, while Macaulay Island is almost entirely without arborescent growth. The whole group is of volcanic origin, and the small Curtis Island is still in the solfatara state.

"A certain number of tropical plants have reached the Kermadecs, but nothing like what might be expected. Amongst these are: Ipomæa pes caprae (which forms the well-known plant society on so many tropical shores), Canavalia obtusifolia (a climbing leguminous plant), Ageratum conyxioides (which bears the name of Cherry-Pie or Wild Heliotrope), Aleurites moluccana (the Candlenut of the Polynesian Islands), also some Grasses and one or two Ferns.

"Certain plants are peculiar to the group. Amongst these are two Coprosmas, C. petiolata and C. acutifolia, the former closely related to C. chathamica of Chatham Island; Suttonia kermadecensis, related to a Norfolk Island plant; Homalanthus polyandrus, a tree of the Spurge family, and a fine tree Fern, Cyathea Milnei.

"But the rank and file of the plants are such as would be met with in the North Island, for example, the Karaka, Ngaio, Wharangi (Melicope ternata), Mahoe, Tutu, Ivy-Tree (Nothopanax arboreum), &c., &c. In fact, about four-fifths of the flora consists of ordinary New Zealand plants."

CORDYLINE BANKSII AT CASTLEWELLAN.

I send a photograph of Cordyline Banksii (see fig. 100), a very fine species which was introduced from New Zealand in 1860. It has been planted out here for 12 years without any protection, and has never been injured in the least by the severest winter; it is in fact perfectly hardy. In its habit of growth it differs from most of the Cordylines, as the plant branches into several stems at a point close to the ground. The plant illustrated has 15 stems; it is 8 feet in height, and has a circumference of 42 feet. The leaves are 5 feet in length, and over 3 inches in width. The colour is dark green, with the midrib of a lighter shade. The plant does not require any special compost, as it thrives well in ordinary garden soil. *T. Ryan, The Gardens, Castlewellan, Co. Down.*

TWO MONMOUTHSHIRE GARDENS.

Mathern Palace was built some 500 years ago by the then Bishop of Llandaff, but after the Reformation, the bishops fell upon evil days and were obliged to relinquish the Palace as a residence. It then became a farmhouse and remained such until about a decade ago, when it was bought by Mr. H. Avray Tipping. He most artistically restored the building, which was in a very dilapidated condition, with the old grey stone found in adjacent ruins and out-houses, so that now, though complete in every respect, it retains all its ancient and time-honoured appearance, while the interior, which is furnished in the best of taste with old Oak, strikes the same note of antiquity. The gardens, though not large in extent, contain many interesting plants, some of these exhibiting a vigour that is rarely attained in other localities. Situated on high ground about two miles from Chepstow, it might be thought that the climate would not be sufficiently mild to permit of tender subjects being planted in the open air, but it is astonishing how robustly many of these grow without protection. The soil is a rich and porous loam, and this has, doubtless, much to do with the well-being of the plants. On a gentle slope leading downwards to the old fish-ponds is a large and irregular bed, partially shaded by Apple trees, in which a varied collection of plants were growing. Campanula Raineri, covering a piece of ground about 6 feet in length and the same in breadth, was marvellously strong, the plants being about 7 inches in height. This unusually vigorous habit has led several visitors to question the correctness of its naming, but, upon Mr. Tipping sending a plant to the late Mr. Wolley-Dod, that authority said there was no doubt that it was the true species. Several of the Primulas were perfectly at home. P. rosea was growing strongly and numbers of self-sown seedlings were springing up around. P. Poissoni, P. capitata, and others were likewise in the best of health. Cypripedium spectabile had attained unwonted proportions, and Lilium superbum towered high aloft. Several plants of Rehmannia angulata were in flower and doing well, Tricyrtis mac-

ropoda was in bloom in groups, and close by T. æstivalis and T. hirta were growing. Sanguinaria canadensis had spread into a large mass and was evidently happy, as was the scarlet-flowered Ourisia coccinea, and Sidalcea Listeri was a tall pyramid of flesh-pink. Over the chinks of the rocks, in a portion of the bed, numbers of Ramondia pyrenaica had spread their wide green rosettes, and tuberous Begonias and Platycodons gave colour to the scene. Dierama (Sparaxis) pulcherrima held arching flower wands fully 6 feet in height, and Muhlenbeckia complexa, climbing was in bud, and Nicandra physaloides, Fostoca purpurea, and Paracaryum tibeticum were in flower. Calceolaria integrifolia was doing well, as were Myrtles, Pomegranate, Sollya heterophylla, and Veronica Hulkeana against walls, but the plants mentioned do not form a tithe of those to be found in this interesting garden.

MOUNTON.

A few years since Mr Tipping bought some property in the hamlet of Mounton, about a mile and a half distant from Mathern Palace, and this fine old Yews and other trees. By the ... numbers of water-loving plants find a home. The yellow and the crimson Mimulus grow here in masses, Rodgersia podophylla displays its handsome bronzed leaves, and Saxifraga peltata its noble foliage. Spiræa gigantea reared its white plumes fully 8 feet high, S. palmata and S. venusta were very vigorous, and Astilbe (Spiræa) japonica showed numbers of self-sown seedlings, as did Primula japonica and P. rosea, while P. sikkimensis was very strong. In July, Ranunculus Lingua was flowering freely in the water, near

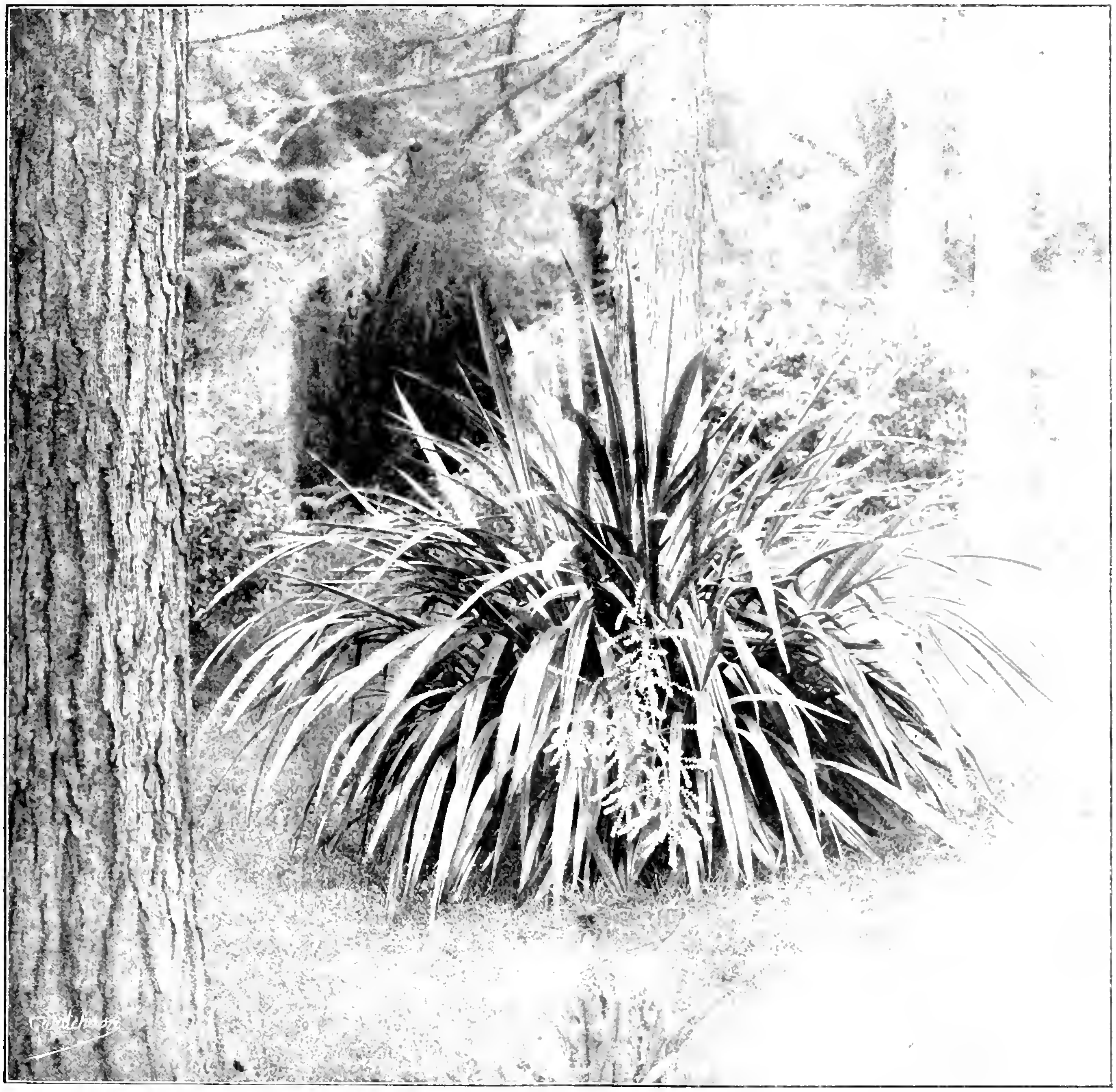


FIG. 100.—CORDYLINE BANKSII IN THE EARL OF ANNESLEY'S GARDEN AT CASTLEWELLAN, CO. DOWN. (See page 240.)
(From a photograph kindly sent by the Earl of Annesley.)

high over a ruined wall made a pretty picture. In a wall-backed bed several plants of Alstrœmeria pelegrina and its white variety were in fine flower. These are rarely seen in the open, even in the south-west, but no fault could be found with the vigorous condition of the plants in question. Diascia Barberæ is held to be an annual, but here, at Chepstow, the plants had been out three years in their dozens, and, being in full flower at the time of my visit, formed clouds of flesh-pink very restful to the eye. The Giant Plantain of North America, Cacalia tuberosa he has been developing into a garden. The situation is a charming one, and offers great facilities for picturesque treatment. It is bordered on the side of the country road by a narrow meadow, beyond which a wide stream meanders through the low land. At the further side of the stream the ground gradually rises until it reaches the foot of a line of cliffs rising to a height of from 20 to 50 feet. These cliffs form a right angle and face west and south, sheltering everything beneath them from the north and east and giving two exposures. They are crowned here and there with which Iris sibirica, I. lævigata, I. orientalis and I. cuprea were growing, as were Anemone ... and Gillenia trifoliata. In the same ... Liatris pycnostachya was 6 feet in height ... Gunnera manicata spread its huge leaves ... white-flowered Rosa Wichuraiana ... over the stream bank, and M... formed handsome clumps ... bordering the stream, ... in profusion. On a steep ledge ... ing the ground, and M... and its white variety were ... health.

On another rocky slope was a fine collection of Saxifrages, a large group of about four dozen plants of S. Burseriana in the most vigorous condition, while S. Boydii alba, S. Elizabethæ, S. Salomoni, S. apiculata and others were equally good, and in a damp spot S. Fortunei was flourishing. S. Mawcana, at the time of my visit, was quite brown and apparently dead, but with the autumnal rains, its foliage soon recovers its rightful colour. In the loamy soil full of stones, Helianthemums were at home, Convolvulus mauritanicus clothed the banks with flower and foliage, and the rough, rocky steps were covered with blossoming Thyme. One slope was hidden by the foliage of the double Arabis; Oxalis enneaphylla had been increased from one plant to six and was the picture of robust health. Galax aphylla was throwing up its flower-buds, Anturrhinum sempervirens was in profuse flower, and Linum campanulatum a sheet of yellow. Of shrubs, Abutilon vitifolium was in the best of health, Romneya Coulteri was in flower at the base of the cliff, Nandina domestica was in blossom, Carpenteria californica was making healthy growth, Coriaria terminalis was affording a fine display of bright orange berries on its 4 foot shoots. Mitraria coccinea, Leptospermum bullatum, Grevillea sulphurea, Veronica Hulkeana, V. anomala and others, Desfontainea spinosa, Indigofera Gerardiana, Pittosporum nepalensis, Andromeda japonica, Abelia rupestris, Rubus deliciosus and Polygala chamæbuxus were all doing well, while Azalea mollis and indica and Rhododendrons appeared suited by the soil. Among the Lilies, L. speciosum, grown in leaf-mould and decayed peat-moss manure, showed unusual vigour, having stems over 7 feet in height though only in bud. Kniphofia Northiæ had a 7-foot flower-shoot, and a collection of Sprenger's Yuccas gave a good promise for future effect. *S. W. Fitzherbert.*

KEW NOTES.

TECOMA MACKENII.

THIS is a vigorous-growing climbing plant, but little known in English gardens. Dried specimens were received at Kew as long ago as 1867 from South Africa. The plant has received several names, the one at the head of this note being the oldest, and the one by which it is known at the Cape, where it is a common plant in the gardens. The names, T. Ficasolana and T. rosea, have also been given it. Under the latter name Mr. Bull distributed the plant in 1886. It is easily grown, but, like the majority of Tecomas, the plants will not flower unless the wood is first well ripened. The plants must be exposed to all the sunlight and air possible during the growing period. Under the scorching influence of the sun at the Cape, the plants flower profusely. At the present time it is flowering on the roof of No. 4 Greenhouse.

The leaves are pinnate, the flowers 2 inches or more in diameter, lilac-pink in colour, with a deeper shading in the throat. The racemes of flowers are said to be 3 to 4 feet in length at the Cape. In this country they do not attain to anything like that length.

ZEPHYRANTHES CANDIDA, &C.

Formerly this plant was not considered quite hardy, but this was a mistake, at any rate, as far as the south is concerned. The chief reason of non-success in its cultivation lies in trying to grow the plant in unsuitable places. Given a sunny position, a sandy soil, and a well-drained border, it grows like a weed, flourishing and multiplying rapidly. At Kew the plant is used largely as a substitute for box edging. When once planted, beyond keeping down weeds, no other attention is necessary for several years, here as box edging, if it is to be kept neat and tidy requires careful clipping, and it will never be so effective as a border of Z. candida in

One of the prettiest sights in the gardens at the present time is the border of Belladonna Lilies in flower in front of House No. 1, edged with Zephyranthes candida. When the sun is shining, and the zephyr flowers fully expanded, it forms a beautiful picture. The rush-like leaves are evergreen, and the flowers resemble those of a white Crocus. In gardens where the soil is heavy, the Zephyranthes may be grown on the rockery, or in the cool greenhouse.

DAHLIA KAISERIN AUGUSTA VICTORIA.

This Dahlia is a good grower, but seldom exceeds 4 feet in height, and produces an abundance of medium-sized, pure white flowers, borne well above the foliage. Besides being useful for garden decoration, the white flowers are valuable for the making of wreaths and crosses. A bed of it not far from the succulent house has been a mass of flowers for the last two months, and promises to continue so till cut down by frost. *J. D.*

The Week's Work.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

The Hardy Flower Borders.—In addition to the "yellow" border recommended in my note of last week, for the purpose of imparting variety and interest to the flower garden, distinctive borders might be made of pink flowers, blue flowers, and white flowers respectively. Regarding the period at which these borders of colour are to be most effective—whether they are to continue attractive more or less throughout the year, or be particularly so during a restricted period—must depend entirely on the requirements of the proprietor, therefore the borders in each garden must be planted accordingly. An excellent effect in pink shades during the months of July, August and September might be obtained from a border planted with 8-feet standard plants of "Dorothy Perkins" Rose in the background, whose pendant branches, covered with the delightful blossoms, should commence to flower in the middle of July and continue in beauty until the end of September. Slightly in front of these standards place a broken line of "Lady Gay" Rose, trained around stakes sufficiently high and broad to be effective, and again, plant in advance of these, 4-feet standards of a Rose similar to "Caroline Testout." In the middle of the border a good pink-coloured Phlox would be effective, and perhaps in front of that a dwarf free-flowering pink Rose. In the spring the border could be completed by planting Sweet Peas of the best pink varieties, in round clumps, and the rose-coloured Cosmos at the back of the border. Lavatera rosea splendens, tall, pink varieties of Antirrhinum, Nicotiana Sanderæ, Clarkia elegans and pink Pentstemons might be planted in the middle, while towards the very front of the border the rose-coloured East Lothian Stock, Verbena Miss Willmott, Diascia Barberæ, Dianthus and pink flowered Phlox Drummondii could be freely used.

White Flowered Border.—In the border devoted to white flowers, standards of tea-scented Roses, Sweet Peas, Nicotiana sylvestris, Campanula pyramidalis alba, Paris Daisy, Anemone japonica alba, Gaura Lindheimeri, Chrysanthemum maximum and white Scabious might be used to give height at the back of the border, and towards the front, according to their heights, such plants as Chrysanthemum Queen Alexandra, Phlox Tapis blanc, East Lothian Stock, the Hyacinth-flowered Candytuft, Alyssum "Snow Carpet," Phlox Drummondii and white Verbenas.

The Blue Border, which should be situated in a position exposed to the full sun and light, might be planted with Sea Hollies (Eryngium), standard plants of Ceanothus "Gloire de Versailles," Campanula pyramidalis, and Sweet Peas as a background, afterwards filling in to the front with blue-flowered Salvias, Lobelia, Commelina, Anagallis Philipsii and other half-hardy and annual plants in the spring.

The "mixed" Borders.—Having made a feature of the distinctive-coloured borders, the mixed coloured borders can be made dissimilar in their arrangement by modes of grouping. One border might be grouped in bold masses of colour, using a limited number of kinds of plants each of a striking and definite colour, while another border might be devoted to obtaining a desired colour effect by bringing together numbers of different kinds to form separate colours. Herbaceous plants, whether perennial, biennial, or annual, which possess charm and beauty suitable for embellishing such borders, are of an infinite number.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Potatos.—Complete the lifting of this vegetable, for after the present time the tubers should not be allowed to remain in the ground. If there is not sufficient accommodation for the tubers to be stored in outhouses, &c., they should be placed in clamps, and there is no doubt that Potatos retain their flavour better when stored in immediate contact with the earth. Keep a look-out for diseased tubers, which soon work destruction amongst the whole. Carefully burn all the Potato haulm, for with it will be destroyed any disease it may bear.

Winter Onions.—The seed of these in many instances has germinated well. A soaking of water will help to swell the roots. Encourage growth by keeping the soil between the lines well loosened.

Cauliflowers.—Seedlings from last month's sowing will now be large enough to transplant into the cold frames forming their winter quarters. This system of growing Cauliflowers is becoming less practised now that some of the newer, early varieties can be had almost as quickly when sown later in January. Slugs must be guarded against in the frames, as these young plants being tender may be soon destroyed. Autumn Cauliflowers, now ready for use, will require their leaves broken over the curds, or loosely tied up, to prevent damage by frost. This trouble will be well repaid. Any "heads" that have reached their full size should be pulled up, root and all, and be hung in a cool shed, where they will keep quite fresh for use for a week or longer. Remove any decaying foliage, for this is detrimental to the colour of the flower.

Peas.—Any remaining crops of this vegetable fit for gathering should be protected from severe weather in view of keeping them in bearing for as long a time as is possible, for, as a rule, Peas can never be had too late or too early in the season. There is just a danger of their becoming too hard if they are not carefully watched. The Gladstone has been our latest cropper, and it is still giving a few good "dishes." Pea sticks should be pulled up as soon as the crops are finished, and the ground be cleared ready for the next crop. All rubbish, such as Pea haulms, Pea sticks of no further use, weeds, &c., should be burned on the ground, and the ashes scattered as manure.

Celery.—This vegetable requires much labour at this period of its growth, for applications of soil are necessary almost weekly in order to secure well blanched "sticks." The earliest plants will, in most instances, be now fit for use, and the latest rows almost ready for their first instalment of soil for blanching purposes. Side growths should be carefully removed, for it is an easy matter to injure the "heads" if they are roughly handled. All the leaves should be tied before the soil is applied about them, and the ties should be cut immediately after the earthing is finished. If the soil is dry, apply, before earthing, a soaking of liquid manure to the roots. It is a mistake to grow the latest batches of Celery too strongly; I have always found plants of medium growth stand the changes of weather better than those of a coarse, sappy nature.

Digging.—The continuation of dry weather affords a splendid opportunity of proceeding as far as is possible with the digging or trenching of any clear spaces. The wheeling or carting of manure can now be done with little damage to paths or to the soil, and it is much better to turn up the soil dry than when soaked with rain or snow water in the depths of winter. A rotation of crops should be decided upon, and the ground be manured accordingly. Half-decayed manure can be safely dug in now, and this will be well decayed before next spring arrives, and all its good qualities will be incorporated in the soil, instead of perhaps some being washed down the drains leading from the manure heap. I strongly advise that liquid manure, which would otherwise be wasted, should be thrown over the ground intended for Onions, Cauliflowers, or Cabbages.

THE HARDY FRUIT GARDEN.

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

Fruit-gathering.—Many varieties of fruits will now be quite ripe, and others are ready for gathering and storing. In some cases the trees must be visited more than once, as the fruits will not all be ready to gather at one time. Pears require careful handling, and especially so if the bloom is to be preserved intact, as will be required if the fruits are wanted for exhibition. A little wood wool of the softest texture should be placed in the baskets or trays in which the fruits are placed, so that in transit from the tree to the fruit-room they will not be shaken or bruised. If Pears are grown for show purposes, several trees of each variety selected for the purpose must be grown in order to obtain a selection. Louise Bonne of Jersey is still one of the best varieties, and the tree is a good grower and cropper. Beurré Superfin produces on most soils very melting, and deliciously-flavoured fruits. Comte de Lamy is a small Pear of great excellence, and at the great Fruit Conference it was selected as the best-flavoured Pear. Although it is not a showy fruit, it sometimes develops a little colour on the side next to the sun. The tree requires careful pruning, as it produces its fruit buds on the ends of the shoots. Emile d'Heyst is another good variety: it produces fruits of considerable size either on bush, pyramid, or wall-trained trees. The flavour is first-class, and the tree is a good bearer, and much more to be depended upon for a crop of fruits than is Marie Louise. This latter variety is still difficult to surpass in its season, and especially in places which suit it. The above varieties, with many others, will soon be ready for harvesting, but they should not be gathered till the last moment that is safe. Many of the October varieties that are not suitable for dessert purposes will be useful for cooking or for preserving. The above remarks on gathering apply also to Apples, of which some of the more tender varieties require very careful handling.

Root-pruning may be proceeded with as soon as the crops have been gathered. The roots should be kept as near to the surface as practicable, but Pears upon the Quince stock should be planted sufficiently deep to allow the union between stock and scion to be just below the surface of the soil. In commencing root-pruning, take out a trench 5 or 6 feet distant from the tree—4 feet will suffice for cordon trees—then carefully fork away the soil, and examine the roots. It may become necessary to lift the tree altogether to ascertain that no large roots strike straight down into the soil from the centre of the root system. This done, cut off any long and useless roots; then replace the soil. If the ground is at all impoverished, supply a portion of new loam, to which has been added some bone meal and a little basic slag. Cover the roots, and well ram the soil about them, finally giving a good watering. Leave sufficient earth round about the tree to allow for sinking. Large trees, 30 or 40 years old, are often quite rejuvenated by this treatment. Apples, Pears, and Plums can all be successfully root-pruned in this manner; in the case of old trees some nice good loam should be placed about their roots.

Strawberries.—There has been little rain in this district, and newly-planted Strawberries have required watering in order to keep them growing. The ground about them should be lightly stirred.

THE ORCHID HOUSES.

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

Repotting.—The repotting of species requiring a cool temperature will now occupy much time, but there are also other Orchids which will require attention. Plants of some species of Cattleyas, including C. Trianæ, C. Mendeli, C. Mossiæ, and several of the rarer hybrids which have out-grown their pots should be afforded larger receptacles. Soon after the leading pseudo-bulbs of these Cattleyas have completed their growths, numerous young roots push from their bases, and when these become visible, the pot should be broken, as much of the old compost taken away as is possible without disturbing the drainage material or the roots, and the plant be placed in a larger pot, filling up around the roots with ordinary Orchid compost. Plants in the warmer houses of various Cypripediums that have recently flowered, and which are pot-bound, also Selenipediums in a similar condition, may now be repotted or top-dressed according as is found necessary. Offsets of Cypripediums should be removed, and be planted in small pots or pans, and if this is done at once, they will become established before winter.

Dendrobiums that have completed their growths should be removed to their resting quarters. Any that have been gradually dried and hardened may be exposed to full sunshine; very little water will be needed to maintain their pseudo-bulbs in a plump condition. Some plants of Dendrobium Phalænopsis have completed their growths and are sending out their flowering spikes. When the flowers commence to open they should be placed in the drier atmosphere of the Cattleya-house.

Thunias which have been standing out-of-doors should, now that the nights are chilly, be taken inside every evening at dusk, but removed outside again in the morning whenever the weather is warm and bright. They will still require a little water at their roots until their leaves drop, and they must be kept free from insect pests.

Pleiones have now completed the growth of their pseudo-bulbs, and as soon as the leaves turn yellow and fall, the amount of water afforded them must be lessened to such a quantity as will keep the soil just moist, but when the flowers are open, watering should be discontinued altogether. Species in the cool house, such as P. humilis and P. Hookeriana, are still growing freely, and they will require copious waterings until the leaves fade. Plants of Miltonia vexillaria that have passed the summer in the cool house should now be removed to their former positions in the intermediate house.

Temperatures.—The following should be the night temperatures for October:—East Indian house, 65° to 70°; Cattleya house, 60° to 65°; Mexican and intermediate houses, about 60°. The higher readings should be maintained only when the external air late at night is about 45°. When below 35° the minimum temperatures given are the most suitable. The cool house, 50° to 55°, or warmer if the weather is mild, and will permit of the lower ventilators being left wide open; but in the event of cold weather rendering fire-heat necessary, the warmth should not exceed the minimum reading. Dendrobiums, &c., that are resting in a cool greenhouse must not be subjected to a temperature lower than 50°.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Soft-wooded plants.—The structures in which these plants are grown must receive careful ventilation in order to keep the plants as sturdy and as compact as is possible. If they are growing in unheated pits, care must be exercised that they do not suffer from an excess of dampness in the atmosphere, and in the case of Primula sinensis and Cyclamen, it will be better to remove the plants to a more airy structure, and one in which a little artificial heat can be applied for the purpose of maintaining a suitable temperature. Show and Fancy Pelargoniums, also Cinerarias, should be transferred to a shelf near to the glass in one of the plant houses rather than be left in a pit. Zonal Pelargoniums which are intended for flowering during the winter months should be given a position near to the glass, and one that can be afforded an abundance of air on all favourable occasions. Circulate a little warmth in the pipes should the temperature fall below 50°. If not wanted now, the flower spikes showing should be removed, for after the Chrysanthemum season is over these bright flowers would be much appreciated.

Chrysanthemums.—The fine weather we have recently experienced in the North has been favourable to the ripening of the wood and the development of the flower buds, which promise to be open early this season. Many growers in this district have their plants already housed, and advisedly, as it is neither safe nor wise to run the risk of injury to the plants from frost or heavy rains. In housing, it is imperative that the plants receive the maximum amount of light obtainable until the flowers are well advanced, when they should be protected by some thin shading material from bright sunshine. At all times a constant current of air should be allowed to circulate freely among the plants, and if damp weather sets in, a little fire heat should be applied by day to dispel damp. If the plants are at all crowded, mildew will most certainly be present: as a preventive the plants should be syringed with a little sulphur and soft soap (2 oz. to a gallon of water), as each plant in turn is taken indoors. Watering should be done early in the day time to ensure that all moisture is dried up by the evening: should any florets be injured by damp, they should be removed at once, otherwise the whole of the florets will become similarly affected. Late varieties may remain out of doors till a later date, but means should be taken to secure them against injury by frost or high winds.

Salvias are very useful plants for placing at the base of groups of Chrysanthemums. They should be given frequent applications of manure water with a little nitrate of soda added, for these stimulants will materially add to the vigour of the flowering spikes.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Cucumbers.—Autumn-fruiting Cucumbers must be grown in genial conditions, and, in order to avoid a too close and moist atmosphere, judicious ventilation must be provided, but not such as to admit of cold, drying currents of wind. Keep the growths well thinned out, and attend to the plants at least twice a week in stopping and removing any superfluous growths, being careful also not to over-crop the plants. Be sparing in the application of water upon the foliage, but damp all available spaces of the house both morning and afternoon, gradually reducing the amount of such moisture as the days shorten and the sun's heat declines. Add a little fresh soil over the roots about once a fortnight, and apply tepid liquid manure once or twice a week, as may be necessary. Fumigate the plants slightly on the first appearance of aphides, and, in the case of red-spider, white-fly, or mildew appearing, paint the hot-water pipes with a mixture of milk and flowers of sulphur. For canker rub quick-lime on the affected parts as often as may be necessary. Maintain the night temperature at about 65 degrees. If Cucumbers are required for consumption during November and December, it is now time to prepare the house for the reception of the plants. Wash all woodwork with paraffin and soft soap, and place a bed of long litter and leaves in the pits, which will furnish a suitable bottom heat. When the material has finally settled down, the rooting medium should be placed on it in the form of mounds, and at this season of the year a little peat mixed with the loam, leaf soil, and decayed manure will be beneficial. The plants should now be occupying 4-inch pots, and when the soil on the bed is warmed through they should be planted, and afterwards treated as was advised for the autumn-fruiting plants.

Figs.—Early-fruiting trees will now be in their resting stage, and will require keeping as cool as is possible by means of free ventilation. If either scale or mealy-bug become troublesome, they can be destroyed by some insecticide. Few fruit trees bear more freely than the Fig, but it is not advisable to allow late fruits to remain on early trees: these must be sacrificed if a good crop is desired next season. If the roots are not kept too moist, fire heat will not be necessary to aid the ripening of the growths. Later trees, however, may require a little artificial heat in order to enable them to mature the fruit-bearing wood. Any root-pruning or overhauling of the borders that is required to be done should be undertaken with [illegible]. If too much rooting space be allowed to such kinds as Negro Largo it is often fatal to good cropping. Such kinds must therefore be restricted at their roots. If new soil is provided, it should not contain manure, but a little lime, chalk, or old mortar rubble are [illegible] ingredients for mixing with the compost.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Oct. 6	Soc. Franc. d'Hort. de Londres meets. German Gard. Soc. meets.
MONDAY,	Oct. 8	United Hort. Ben. & Prov. Soc. Com. meets.
TUESDAY,	Oct. 9	Royal Hort. Soc. Com. meet.
THURSDAY,	Oct. 11	Manchester & N. of England Orchid Soc. meets.
SATURDAY,	Oct. 13	Dutch Gardeners' Soc. meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—52·7°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, October* 3 (6 P.M.): Max. 64°, Min 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday, October* 4 (10 A.M.): Bar., 29·9, Temp., 62°, *Weather*—Fine.

PROVINCES.—*Wednesday, October* 3 (6 P.M.): Max. 69° Southampton; Min. 50° North-east Coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY AND WEDNESDAY—
Annual Sale of Nursery Stock at Sunningdale Nurseries, Windlesham, Surrey, by Protheroe & Morris, at 12.30.

WEDNESDAY—
Bay, Box, Palms, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY AND FRIDAY—
Sale of Nursery Stock at the Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.

FRIDAY—
2,000 Odontoglossum crispum and other Orchids at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

George Bentham.[*]

To the present generation of gardeners, and even to botanists of the new school, George Bentham is little more than a name; nevertheless, he will ever take rank among the foremost botanists of the world, and as one almost unrivalled in the extent of his experience, his perspicacity, the soundness of his judgment, and the excellence of his method. This is not the place to speak of him from the point of view of pure botany. It is rather of his relations to horticulture that we would allude, for, like so many who have served horticulture well and truly, the memory and the appreciation of his work is now confined to a few, and is wholly ignored by the majority. This savours of ingratitude, but it is "the way of the world." We are therefore grateful to Mr. Daydon Jackson for enabling us to realise our obligations to this distinguished man of science. To those of us who remember Bentham's shy and unattractive manner in his later life, and his unvarying, mechanical, routine method of work, the present book will come as a revelation. It is devoted to the life-history, not of one Bentham, but, as it were, of more than one personality. In the earlier chapters we have a sketch of the man of business, the agriculturist, and the manager of an estate in France. Later on we have the logician and the law student.

At this period of his life he entered freely into the gaieties of society, and nothing is more surprising to those who knew him in later years than to read of the zest with which in earlier years he enjoyed the social amenities and even the innocent frivolities of life. To the last, however, there was beneath his reserved manner a most kindly, helpful temperament, always ready to assist and encourage, but never ready to make his benefactions known.

For a time there was a struggle between his legal studies and his growing addiction to botany. Possessed of sufficient private means, the issue of the struggle was not long left in doubt. Botany won the day. The extensive acquaintance he soon made with the leading botanists of Europe and America confirmed the victory. From that time forth his labours in the pursuit of botany were marvellous in their extent, and at the same time models of perspicacity and trained judgment. The seven volumes of *The Flora Australiensis*, the invaluable *Genera Plantarum*, drawn up in co-operation with his life-long friend Sir Joseph Hooker, may be specially mentioned as among the greatest and most valuable of his labours, but they form, after all, but a small portion of his monographs and other publications.

Inheriting, as it were, from his predecessors the dogma of the immutability of species, it is no wonder that Bentham was not an immediate convert to the Darwinian views of evolution. The change came gradually, till at length no worker was more fully imbued than he with the principles of evolution as now recognised. How greatly the assent of such a working naturalist as Bentham influenced the minds of others may readily be conceived.

Bentham's presidency of the Linnean Society for a number of years was truly a noteworthy epoch, so far as the history of that society and the progress of botanical science is concerned. His was no nominal Presidency: he worked hard even at details usually undertaken by subordinates. His annual addresses were, and still remain, most remarkable for their range, their grasp, and their philosophic insight.

All this, and much more to which we cannot here do more than allude, is detailed in Mr. Jackson's narrative.

We must specially advert here to Bentham's services to horticulture.

In 1823 he visited Chiswick for the first time, and there met Lindley, then Garden Secretary. Bentham's note relating to the Society at this time was:—

"If well managed, this may become the most useful and extensive of all scientific societies. They must only remember what their brother societies are apt to forget—I mean the old proverb, "Out of debt out of danger."

"Unfortunately," adds the Editor, "they were not long clear of it."

In 1827 we find the following further note having reference to the Society:—

"On Saturday, 24th June, the Horticultural Society inaugurated their *fêtes* at Chiswick, about 3,000 being present; the chief attractions were bands in the gardens, and a splendid show of fruit in a tent, which exhibit was not to be touched till six o'clock; at that hour the company made a rush at the tables and cleared off everything, carving the pineapples with their penknives. Soldiers were there to act with the gardeners should need arise (the new police were not then in existence). The people departed from seven onwards in about 1,200 carriages, and Bentham walked home."

In 1827 also, Bentham made the acquaintance with Lindley's family at Acton Green—"the real commencement of a long and valuable intimacy." At Lindley's he met David Douglas, whose delicate features, as represented in his portrait, ill agrees with the account here given of his character[*]:—

"He was quite rough in his manners and longing to go out (to N.W. America). His cost of maintenance during three years came to £66 (!) Most of his food he shot, and in time of scarcity he ate the skins he had reserved for home, and on two occasions he ate his horse."

In 1830 Bentham's relation to the Horticultural Society became more intimate:—

"April brought in events which turned Bentham's thoughts and occupations into yet another channel. He had joined the Horticultural Society some months before, and was on the most friendly footing with Sabine, the Secretary, and Lindley, the Assistant Secretary, the head of the executive. Sabine had for some time been the actual manager and dictator of the Society, the Council being expected merely to acquiesce in his views; he had brought the Society to a high degree of success and popularity, but he could not calculate ways and means; he was over-sanguine as to support from the wealthy and fashionable crowd who thronged the Chiswick *fêtes*, and expenditure became lavish without regard to income. A large debt of £22,000 had accumulated, and this coming to the knowledge of the Council, great indignation was expressed. At this juncture Mr. Barnard, a Vice-President, called on Bentham, informed him of the state of affairs, pointed out the need of help from men who had not taken part in the recent disclosures, and begged him to take up the post of Councillor. On finding it would probably only take up a few hours once a fortnight, he consented; finally he was induced to become Honorary Secretary, in which he continued till the spring of 1841. The Council met on the 19th April, when Sabine brought forward his motion for reconstructing the offices, namely, a Garden Secretary, and a Head Clerk in Regent Street, each at a low salary. This was aimed at Lindley, the outcome of the feud between the Honorary and the Salaried Secretaries; Lindley would have refused either of those posts, while Bentham would not undertake the new duties without Lindley. The matter was adjourned for a week, and in a Council of thirteen, Sabine's proposal was put to the vote, when the ballot box showed fourteen balls, seven for and seven against; the Chairman, Dr. Henderson, sent the box round again with the same result: on which the Chairman requested all present, two earls among them, to turn up their cuffs, and on the third time of voting seven came out against the plan and six for it. Dr. Henderson quitted the chair in anger, one Councillor resigned, while Lord Carnarvon (the second Earl) congratulated Bentham. Sabine predicted that Bentham would rue the day when he had saddled himself with Lindley. At the end of the month, Mr. T. A. Knight, of Downton, the President, came to town for the anniversary on 1st May, Bentham entered on his new duties, and the Society

[*] George Bentham. By B. Daydon Jackson. London: J. M. Dent & Co.

[*] By an unfortunate oversight the portrait of Robert Fortune was given in one of the recent volumes of the *Journal* of the R.H.S. as that of Douglas. Moreover the error was attributed to the *Gardeners' Chronicle*, which was in no way responsible for it.

rapidly quieted down. The financial question was grappled with, Bentham suggested that £4,000 to £5,000 should be raised on 5 per cent. bonds by the Council, and put down £2,000 himself. The coal merchant, who threatened execution, was paid off, as were other troublesome creditors, and the bondholders, realising the altered conditions, ceased to clamour for their money, and conciliatory words brought back many withdrawing members. Ladies were admitted to fellowship, and reduction in the staff, both at the garden and in the London office, became possible, when it did not look like compulsion by pecuniary distress. Bentham drew up a new set of bye-laws, which were discussed; finding that two members were resolved to object to everything, Bentham resolved on strategy; he brought forward a few verbal points of no practical importance to be hotly discussed, on which, after long talk, Bentham gave way, which satisfied the objectors, and the important parts passed unchallenged. By these means harmony was restored, but Bentham found that the Honorary Secretaryship was no sinecure."

"The horticultural *fête* in June was a success, 5,362 visitors being present. It was the custom for all tickets to be signed by Bentham as Secretary, which entailed many hours of mechanical labour. No fewer than 3,800 attended the Chiswick *fête* on the 7th July."

Another extract of great interest may here be given:—

"On 12th February, 1846, he was 'engaged the greater part of the morning at the Horticultural Society about a proposal made by the Secretary of the Treasury for our taking the Kew collection on certain conditions.' Elsewhere he wrote that this note came with an intimation 'that if refused they would be offered to the Botanic Society of Regent's Park. We both felt that this breaking up of the Kew collections would be a disgrace to the nation, and that if it were desirable to prevent it there was no time to be lost.'"

"Lord Melbourne" (we are told) "put a stop to it immediately after having seen the Duke of Devonshire, and that the offer never was made to the Regent's Park Society." (*Gardeners' Chronicle*, N.S., v. 1876, p. 400. John Smith's account of the transaction will be found in the same volume at p. 364.) "The state of the gardens had been under consideration for some years previous, and Dr. Lindley, with Messrs. Paxton and Wilson, had inspected the Royal Gardens and reported in February, 1838, to a Treasury Committee."

In 1841 Bentham resigned his post as Secretary to the Horticultural Society. During his tenure of office, in addition to his official work, he contributed very largely to the determination and description of the numerous plants sent home by Douglas, Hartweg, and other collectors.

In the same year, 1841, the *Gardeners' Chronicle* was established by Lindley and others, and Bentham at once became one of its most valued contributors. Many of his articles are unsigned, others marked with initials only. They comprise descriptions of new plants, a translation of Rè's Treatise on Vegetable Pathology (1840-50), and numerous accounts of foreign botanic and other gardens visited by him in the course of his prolonged autumnal holidays, when he came in contact with, and indeed became intimate with, most of the botanists of the day. Bentham continued to be an occasional contributor for many years, and the present Editor, like his predecessor, has reason to hold him in grateful recollection.

"In October, 1855, the Benthams came back to London, after a round of visits extending over two months. No sooner was Bentham back in town than he joined in discussing the plans of the Horticultural Society; it was proposed to give up Chiswick, which the Society could no longer support: 'painful as it is thus to break up a Society in which one has taken so much interest.' But the Society was not doomed then to this fate; not only was the catastrophe averted on the occasion, but it overcame a much more threatening, overwhelming one some years later."

"On 29th January, the collections of dried plants belonging to the Horticultural Society were sold by auction: 'Brown for the British Museum, and Planchon for the Paris Museum, and Delessert were the principal bidders, and paid very high prices for some lots. Pamplin also bought a good deal . . . . and I bought several collections for Agardh and some for de Candolle.'"

Our notice has extended to a greater length than we intended, but it is indeed difficult to know where to stop. As it is, we have not alluded to Mr. Bentham's resignation, under painful circumstances, after many years of devoted and distinguished service, of the Presidency of the Linnean Society. It was ultimately decided by high legal authority that Bentham, whose conduct at a certain juncture had been impugned, had been strictly correct in his decision. Nor can we do more than allude to the wretched insolence of an ignorant Minister of State towards Sir Joseph Hooker, a matter which caused a great commotion at the time, and one in which Bentham was naturally greatly concerned.

Mr. Jackson has done his task well. He has evidently been hampered by wealth of material and by difficulty of selection. He has here and there inserted details of minor general interest, but we do not find that he has omitted any important particular. He may be cordially congratulated on having produced a work which will be consulted by the future historian of the botany of the nineteenth century along with the classical life and letters of Asa Gray and the masterly summary by Sir Joseph Hooker of the life and labours of his father, Sir William. It is the fashion now to speak of these men, as well as of Robert Brown, the Decaisnes, the Martius, the de Candolles, and others, as botanists of the old school; and in a sense this is, of course, true, but it must be long, indeed, before the new school can be in a position to show such a record as that achieved by their predecessors.

Mr. Jackson has greatly facilitated the researches of the reader by the excellent tables of contents and elaborate index which he has provided.

Our Supplementary Illustration shows a handsome plant of Cordyline indivisa growing in the Earl of Annesley's garden at Castlewellan, concerning which his lordship's gardener, Mr. T. Ryan, writes as follows:—"The plant was raised from seed sown in these gardens. In the spring of 1897, the late Mr. Burbidge, of Trinity College Gardens, Dublin, had seeds sent to him from New Zealand, and he sent some to the Earl of Annesley. Eighteen plants were raised from the seeds received, some of which were sent to Mr. Burbidge, as his own seed failed to germinate, and some to Kew and Glasnevin Gardens. We found them most difficult to keep alive through the winter during the first few years. We lost several plants, and it is probable that we should have lost them all had we persisted in growing them in pots during the winter. Instead, we turned them out of the pots and planted them in the border of a cool orchard house, and covered up the roots with leaf-soil. After that we had no more trouble. When planting them out in the nursery border the following spring the 'balls' were a mass of young roots. We treated them in a similar way the following winter, and they increased to such an extent that it took a couple of men to lift them on their removal to a permanent place. They have been in the pleasure grounds at Castlewellan for seven years, and during that time they have received no protection, and have not been in the least injured by frost or snow. This magnificent plant requires shelter from prevailing winds to prevent the leaves being broken. The plant photographed is 8 feet in height, with a circumference of 27 feet, the leaves are 5½ feet in length and 7½ inches in width; dark-green above the midrib, and the secondary nerves of orange colour, the under surface is glaucous with orange-coloured nerves. In a letter I received from Mr. Burbidge at the time, he said it was the first time Cordyline indivisa had been grown from seed in Europe since Lee, of Hammersmith, raised a few seedlings in 1857." An illustration of C. Banksii growing at Castlewellan will be found on reference to p. 241.

Royal Horticultural Society.—The next meeting of the committees will be held on Tuesday, October 9, in the Society's Hall, Vincent Square, S.W. A lecture on the "Origin and Peculiarities of Climbing Plants," illustrated by lantern slides, will be given by the Rev. Prof. G. Henslow, V.M.H., at 3 o'clock.

The thirteenth annual show of British-grown fruit will be held in the Society's hall, Vincent Square, Westminster, on Tuesday and Wednesday, October 16 and 17. Fellows of the Society will, on showing their tickets, be admitted at 1 p.m. on October 16, and at 10 o'clock on October 17. The public will be admitted at 2 o'clock on October 16 on payment of 2s. 6d., and at 10 o'clock on the 17th on payment of 1s. The show will close at 6 p.m. on both days. On the first day a lecture on the "Food Values of Fruit" will be given by Dr. Josiah Oldfield. The judges will assemble in the entrance hall at 10.15 a.m. on October 16. The Fruit Committee will meet at 11. The other committees will not meet, and only exhibits of fruit will be staged. Exhibitors can commence staging on Monday, October 15, at 1 p.m., or at 6 a.m. on the 16th. Exhibits can be removed at 6 p.m. on the 17th. We are requested to state that the Society will unpack and stage exhibits if notified three days previously of the owner's inability to do so, but in no case can the Society undertake to repack or return any exhibits. Copies of the schedule can be obtained on application to the Royal Horticultural Society, Vincent Square, Westminster. Entries close on Tuesday, October 9.

British Gardeners' Association.—We are informed that at the last meeting of the executive council of this association, held in the Horticultural Hall, Westminster, Mr. W. H. Divers, from Belvoir Castle Gardens, presiding, eighteen new members were elected, bringing the total up to 943. Four applications for membership were declined. The question of forming a junior branch of the association for the admitting of apprentices was discussed, and a scheme will be formulated for consideration at the next meeting. An application having been received to hold a meeting of the association at Bournemouth, it was decided that arrangements be made accordingly. The executive council wish it to be known that a delegate will be sent to address meetings in any part of the country where a reasonable number of gardeners can be got together. Applications from anyone interested in such meetings are invited, and should be addressed to the honorary secretary, Talbot Villa, Isleworth.

BOTANICAL MAGAZINE.—The following plants are figured and described in the issue for October:—

ODONTOGLOSSUM NALVIUM, tab. 8,097.—This Colombian species was originally figured and described by Dr. LINDLEY, in 1850, from a plant which was exhibited at one of the spring meetings of the Horticultural Society. The plant dropped out of cultivation, and after many years was reintroduced from the mountains near Santa Martha. The flowers are white, with numerous dark purple blotches, and a bright yellow disc to the lip; sepals spreading, narrowly lanceolate, very acuminate, recurved undulate, about one inch and a half in length, the petals being very similar, but of rather shorter length. The plant now figured flowered in a temperate Orchid house at Kew in February last. The present description is by Mr. R. A. ROLFE.

ABIES MARIESII, tab. 8,098. This handsome Japanese silver Fir, allied to A. Webbiana, was first figured and described in *Gardeners' Chronicle*, December 20, 1879, p. 788, fig. 129. The present figure and description by Dr. M. T. MASTERS have been prepared from a tree growing on the estate of the Earl of ELGIN, Dunphail, near Nairn, and it is believed to be the first occasion on which this species has produced cones in this country. The species was originally discovered in the mountains of Northern Japan by the late Mr. CHARLES MARIES, who introduced it to the Coombe Wood Nurseries of Messrs. JAMES VEITCH & SONS. It differs from A. Webbiana in the hairy shoots, denser, shorter, less horizontally spreading leaves, and in the shorter, cask-shaped cones.

BLAKEA GRACILIS, tab. 8,099. Mr. S. A. SHAW describes this species from a plant purchased in 1901 from Messrs. LEMOINE & SONS, of Nancy, which flowered in a greenhouse at Kew in February last. It is a glabrous, much-branched shrub, 9 to 13 inches in height, or sometimes a small tree. The leaves are obovate-elliptic or elliptic, 2½ to 4 inches in length, and about 1¼ inch in breadth. The flowers are axillary, solitary or rarely geminate, about 1½ inch across; white, slightly tinted with pale rose colour. The plant was first described by HEMSLEY from material collected by ENDRES for Messrs. JAMES VEITCH & SONS. B. trinervis, tab. 451, is the only other species in cultivation.

CHLOREA VIRESCENS, tab. 8,100.—This species originally appeared in cultivation in the Birmingham Botanic Garden in 1815, when it was exhibited at a meeting of the Horticultural Society, and figured in the *Botanical Register*, but was soon lost sight of. It was recently re-introduced by Mr. H. J. ELWES, of Colesbourne. He found the plant growing on sandy flats near Coronel, Chili, in December, 1901, and sent plants to Kew, which flowered in a greenhouse in April, 1903, and on subsequent occasions. The flowers are of large size, yellow in colour, varied with green. They are borne on racemes measuring 4 to 6 inches in length. The present description is by Mr. R. A. ROLFE.

PASSIFLORA PFUGLEA, tab. 8,101.—Mr. T. A. SPRAGUE describes this South American species from a plant which was received in 1904 from the State Botanical Gardens, Brussels, under the name of P. maculata, which flowered at Kew in the autumn of 1905. The plant has variegated leaves, being marked with purple between the veins, on both surfaces. The flowers are yellow.

THE LATE CHARLES WILLES WILSHERE.—The death of Mr. WILSHERE, of The Erythe, Welwyn, is announced at the age of 92 years. He could was much interested in horticulture, and was a frequent occasional correspondent to these pages.

WINTER-FLOWERING CARNATION SOCIETY.—The first show of the Winter-Flowering Carnation Society will be held on December 4, in the Royal Botanic Gardens, Regent's Park. The schedule of prizes to be competed for may be had on making application to the Hon. Secretary. The competition is open to members only. All interested in this class of Carnations, and not yet members of the society, are asked to communicate with the Hon. Secretary, Mr. HAYWARD MATHIAS, Rodown, Medstead, Hants.

EVENTS IN 1907. The secretary of the Royal Horticultural Society writes us as follows: "The council of the Society have fixed the following dates for the exhibitions of the Society in 1907.—January 8, 22; February 12 (annual meeting); March 5, 19; April 2, 16, 30; May 14, 28 to 30 (probably in the Temple Gardens); June 11, 13, 14 (colonial grown fruit and vegetable show), 25; July 9, 10 (Holland House), 23; August 6, 20; September 3, 17; October 1, 15, 17, 18 (British grown fruit), 29; November 12, 26, 28, 29 (colonial grown fruits and vegetables); December 10, 31. There will be no colonial fruit and vegetable show in March as the governments of the South African colonies, in whose interests the show has been held, have combined and hired the Royal Horticultural Hall for a great exhibition of products in February and March, 1907. Negotiations are also in progress for the autumn Rose show, the Sweet Pea show, and the exhibitions of the other kindred societies to be held at the Hall as usual. The Sherwood Cup will be awarded at the Holland House show on July 9 for the best collection of herbaceous and bulbous plants shown in pots or tubs on a space not exceeding 400 square feet."

BURBANK AS A PLANT BREEDER.—We take the following extract from the pages of *Nature*: "The review of Mr. LUTHER BURBANK's work, written by Prof. HUGO DE VRIES in the *Biologisches Centralblatt*, September 1, gives the opinion of the foremost scientific plant-breeder on the work of one of the most successful practical plant breeders. While fully recognising the remarkable acumen of BURBANK's judgment, and the practical value of his work, Prof. DE VRIES finds a marked contrast between the aims and methods of the two types of worker. Careful experiment in the cultivation of crossing on a limited scale of pure types with definite characters the task of the scientific investigator; the hope of the nurseryman lies in the chance possibilities arising out of the production and selection from a vast number of variations; for instance, Mr. BURBANK selected his Plums from 300,000 hybrids. One of the most important features of Mr. BURBANK's work has been the cultivation of remote species with possibilities that have escaped the consideration of less [? more] conventional cultivators. The stoneless Plum was obtained from crossing some plants, 'Prunes Sans Noyau,' at one time cultivated in France. An intuitive genius for selection of promising varieties is the key to Mr. BURBANK's success."

THE NATURE OF FERTILISATION.—The discussion at the British Association (conjointly with Section K) on the nature of fertilisation was initiated by Dr. V. H. BLACKMAN, who gave a brief account of the recent work on which the present views of fertilisation are based, dealing specially with the role of the chromosomes, and taking as a starting point the theory put forward by MONTGOMERY (1901), that in synapsis the maternal and paternal chromosomes unite in pairs, and are later separated by the reduction division, which thus divides the somatic chromosomes into two groups. Fertilisation appears to be incapable of exact definition, for apogamy and parthenogenesis link it on to vegetative reproduction, and, indeed, nuclear fusions and reductions occur in plants apart from reproduction, *e.g.*, in graft hybrids of Mespilus and Crataegus there is evidence that the fusing of vegetative cells has led to the mixing of characters.—*Nature*.

WILLIAM MITTEN.—The *Journal of Botany* for October contains a photograph and appreciative notice by Mr. HEMSLEY, of WILLIAM MITTEN, the accomplished bryologist, who died on July 27 last in his 87th year. By profession he was a pharmaceutical chemist, but at the commencement of his career developed an affection for the study of botany. Encouraged by BORRER and Sir WILLIAM HOOKER, he paid special attention to mosses and liverworts generally, and soon became one of the leading authorities on these plants. He made many contributions to the literature on such plants, some of which were published in separate volumes by the Linnean and other societies. His greatest work was the *Musci Austro-Americani* published in 1869, which occupies the whole of the 12th volume (upwards of 650 pages) of the *Journal of the Linnean Society*. The basis of this was the very fine collection made by RICHARD SPRUCE; about 1750 species belonging to 127 genera are described. Mittenia Lindberg was founded on Minopsis Plumula, the name Minopsis being already in use.

DR. FRANZ SCHUTT, Director of the Royal Botanical Garden and Museum at Griefswald, on the occasion of the 150th year's festival of the establishment of the University, was made the recipient of the Red Eagle Order of the IV. Class.

THE PHYLLOXERA IN SWITZERLAND.—This pest of the Vine has appeared at Sitten, in Valais, the finest wine district in the country; a patch of about a hundred Vines being attacked. The district of Valais had remained uninfected hitherto, and the authorities have not failed in taking every precaution to prevent an extension of the plague, the importation of Vines, cuttings and table Grapes being strictly forbidden. There is an insurance fund against the Phylloxera danger, and every vineyard proprietor has to pay into it annually 5 *rappen* for every 100 francs' value of his Vines; and the fund has at the present time at its disposal the sum of Fr. 93,000.

PENTAS CARNEA VAR. ALBA AND SANCHEZIA NOBILIS.—We remark in *Die Gartenwelt* for September 15 an illustration consisting of three plants of Pentas carnea var. alba, shown by Herr RECKTENBEN, gardener at Cassel, at the recent horticultural show at that town. The plant exhibits much decorative value, the flowers being very abundant, of the shape of the longer-tubed Bouvardia, as B. candidissima, or B. Humboldtii, and coming in loose terminal, erect panicles. We would recommend this plant to florists and gardeners for decorative uses in warm houses and apartments, and for its graceful habit, pure white flowers and abundant foliage. Three illustrations in the same journal of Sanchezia nobilis, shown by the same gardener, indicated the usefulness of this old inhabitant of our stoves as a table plant. Apparently they stood about 1½ feet high, the foliage was large with the colouring well brought out and almost hiding the pots from view.

THE POISONOUS PROPERTIES OF PRIMULA OBCONICA AND P. SINENSIS.—An account of the researches made by Herrn. K. WEYHAHL is given in the *Gartenflora* for September this year as to the causes of the irritation and inflammation of the skin produced in some persons when handling these two species of Primula. The actual work was carried out under the direction of Herrn. Dr. HANSTEEN, at the Botanical Institute of the Agricultural High School of Norway. Herrn. WEYHAHL says that the hairs found on the leaves, and chiefly on the upper surface of the leaves, are alike in both species. KAMENSKI, who, in 1875, carried out an anatomical examination, says of the hairiness of P. sinensis that the epidermis carries two sorts of hairs with globular heads or ends. These hairs consist each of two cells, a cylin-

drical short one forming the stalk, and a globular one above it containing the poisonous secretion. The cells consist of frothy liquid, together with large vacuoles, and are, as is the epidermis, covered with a thin cuticle, beneath which is situated a fragrant substance. This

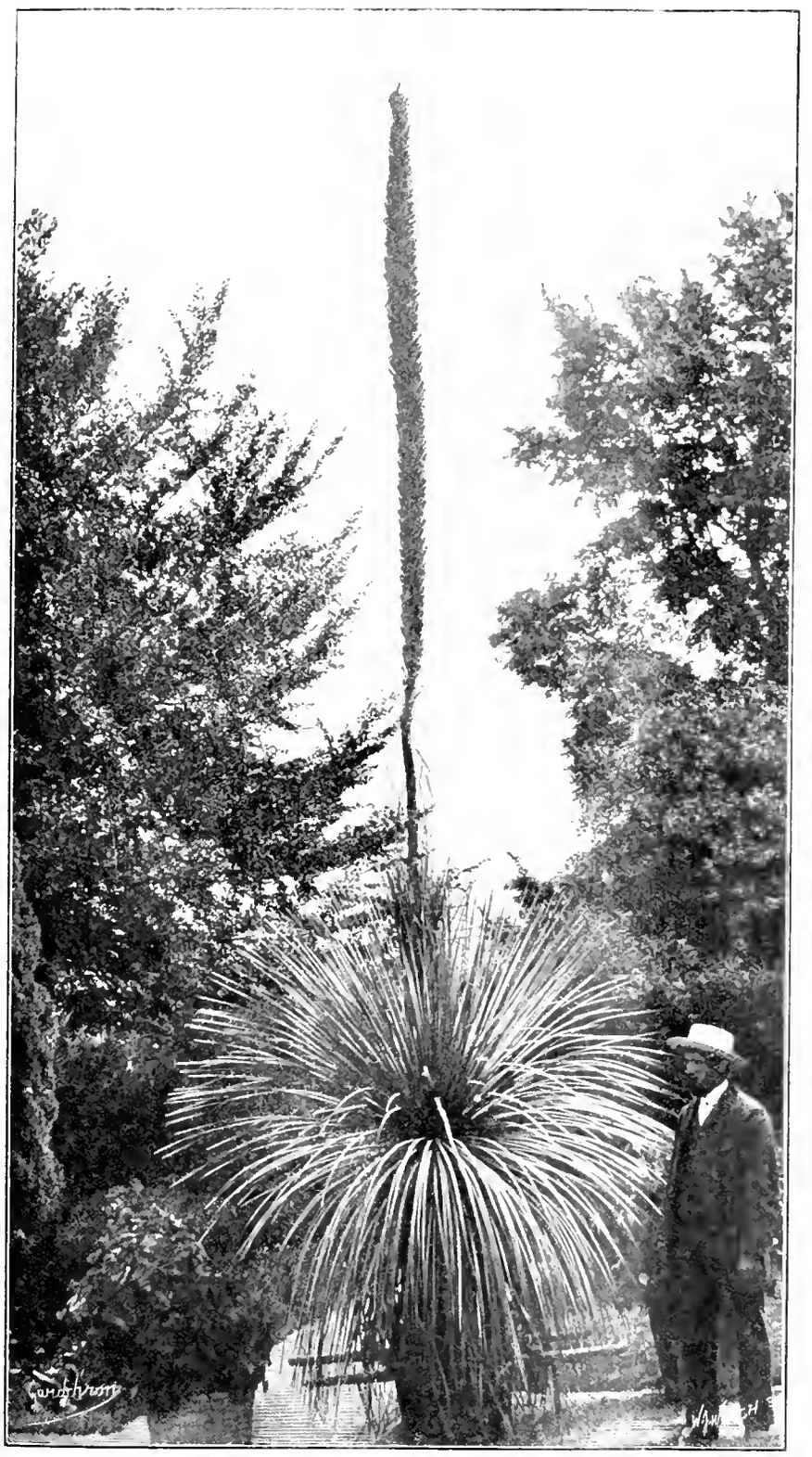


Fig. 101.—Dasylirion glaucophyllum flowering in the garden of Lady Theodore Guest, at Templecombe.

sub-tabular forms at the top of the hairs, and in the same manner as Hansteen has described as occurring in Syringa vulgaris; and is exuded at the point of the hairs between the cuticle and the membrane of the cell. The other hairs resemble these, but have longer stalks, which consist of two, three, and four cells; the two lower ones are drawn out at some length, and are broader than the upper cells, but they secrete no poisonous substance. Kamienski's interpretation of the anatomical and physiological nature of the hairs of these species of Primula is, that they are identical. The researches were carried out in dry air and warmth, moist air and warmth, and in cold air and moisture, and in other methods, in order to show which had the greatest influence on the development of the poisonous property of the hairs. The results showed that the formation depended largely on the method of cultivation adopted, as the plants were more free from the irritating poison when grown in moist warmth, and that in dry heat or under cool conditions it increased. These facts may account for the infrequent complaints made by commercial cultivators who grow their plants quickly, as compared with private gardeners who have not the same reasons for developing rapid growth in their plants. The article from which we quote is of considerable length, and it is illustrated in a very instructive manner with figures of the poisonous and non-poisonous hairs.

Mr. F. Jordan. We are pleased to hear that Mr. F. Jordan, late gardener at Impney Hall, Droitwich, and writer of our weekly calendar last year on the cultivation of "Fruits Under Glass," has been appointed Gardener to Lord Nunburnholme at Water Priory, York. Our readers will remember that on many occasions Mr. Jordan exhibited fruit from Impney and met with gratifying success.

Another New Tomato.—The Fruit and Vegetable Committee, on September 25, recommended another Award of Merit to a Tomato of the Duke of York type. It was named Lye's Early Gem, but as the fruits were, contrary to custom, removed from the hall early in the day, we were not able to describe them in our last issue.

New Pest on Black Currant Leaves.—The Black Currant, one might have supposed, was already sufficiently preyed upon by the destructive bud-mite (Phytoptus ribis), but according to our correspondent, M. C., a new pest has attacked the leaves of the plant. He writes as follows:—"During September the leaves of Black Currant bushes in a garden at Hasselmere have been attacked with the uredo and teleutospores of a fungus to nartium ribicolum. As far as we know it is the first time of its appearance in Britain, although it has been known on the Continent, perhaps, for a century. It is affirmed by some authors that the Æcidium found produced on the Weymouth Pine. The species of Cronartium exhibit a peculiar form of teleuto-peridium, another species is found on leaves of Peonies."

Publications Received. [illegible] *Handbook* [illegible] *Shrubs*, by E. M. G. [illegible], published by [illegible] & Co.; price 3s. 6d.

DASYLIRION GLAUCOPHYLLUM.

The Dasylirions are very ornamental plants by reason of their beautiful linear, drooping foliage, which forms a crowded tuft, as will be seen on reference to fig. 101. They are very suitable plants for sub-tropical gardening, or for decoration of the conservatory. They are all, with one exception, natives of Mexico, and belong to the same natural order of plants as the Yuccas, namely, Liliaceæ, which plants they somewhat superficially resemble. One of the commonest species met with in gardens is D. glaucophyllum, but it is not often that the plant develops its tall inflorescence. The specimen shown at fig. 101 was flowered in the gardens of Lady Theodore Guest, at Inwood, Templecombe. Her ladyship writes: "I enclose a photograph of Dasylirion glaucophyllum in flower. Mr. Watson, of Kew, informs me this species flowered in the Royal Gardens, Kew, two years ago. The rapidity with which the inflorescence grew is astonishing. On Monday, June 11, the beginning of a flower stalk was first noticed, in a fortnight on June 26, it had grown fully 16 feet, and we had fears it would grow through the glass roof of the conservatory. However, the flower buds around the stalks began to thicken rapidly, when the growth of the latter became less rapid. By July 1 it had completed its full height of 18 feet 10 inches. The circumference of the stalk at the lowest point was only 6 inches, but at the thickest part, where it was closely covered with flower buds, it measured 16 inches [illegible] circumference. The

individual flowers are excessively minute, three-sided in shape, exactly like the calyx of the tuberous rooting Begonia. They are of a pale green colour, triquetrous, and have a pistil apparently at the apex, with inconspicuous stamens at the base. The flowers are apetalous, but the pistil is so minute it might possibly be a rudimentary corolla. The plant during the summer has been placed out of doors."

PRIMULA COCKBURNIANA.

Owing to a mischance, a figure of P. tangutica was given in our last issue (fig. 96) as P. Cockburniana. We hasten to remedy the error by giving at fig. 102 an illustration of the true P. Cockburniana, one of the most remarkable of all Primulas by reason of its orange-coloured flowers.

HOME CORRESPONDENCE.

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

Burbank's Giant Prune.—I send three fruits of "Burbank's Giant Prune" from three-year-old trees in my nursery. Several of the trees carried four and five fruits each, which certainly seems to promise that the variety will be a good bearer; the tree is a strong and shapely grower and appears to be perfectly hardy. I think it will prove a valuable variety to follow Monarch and Pond's Seedling, as it is later than these. *Geo. Pyne, Dewer Nurseries, Topsham, Devon, September 24.*

[The fruits are rather long, not broad, purple in colour, and rather acid to the palate. They are suitable for culinary purposes. Ed.]

Tomato Carter's Sunrise.—In the early part of the present year I raised plants of this variety for the purpose of comparison with standard varieties and with a view to testing the wonderful cropping and other good qualities which Sunrise was said to possess. As the result of this test I may say the qualities of this Tomato were in no way overrated in the recommendations with which this novelty was introduced. It is a good grower and a prodigious cropper, the stems being furnished, from within 6 or 9 inches of the ground upwards, with large clusters of from 9 to 13 handsome and brightly coloured fruits. The fruit is of a good size, the flesh being deep, solid, and fine in quality. The individual fruits, moreover, are even in size and shape, the apex or crown of fruit being in every case scarcely discernible. Sunrise is by far the best all-round Tomato among the many that I have grown, and I can recommend it to all who cultivate this fruit and especially to those who, like myself, grow for market. *H. W. Ward, Lime House, Rayleigh, September 19, 1906.*

Sutton's Evergreen Dwarf Bean.—I have grown this Bean this season with standard varieties such as Canadian Wonder, Ne Plus Ultra, and Perfection, and it has been far superior to any of them. The chief quality possessed by the variety is the length of time it remains in bearing, and it produces a supply of deliciously tender pods which keep fresh longer than those of any of the older kinds. It is of excellent table quality. It does well grown either as an early, mid season, or late kind, and it stands drought in a light, sandy soil better than any other Bean known to me. I am sending two plants from a batch that was sown on July 21, from which we have been gathering for three weeks. *G. H., Caversham Park, Mildenhall.*

[The plants sent were still in bearing.—Ed.]

Chrysanthemums. I called at Messrs. Cragg, Harrison & Cragg's Nurseries, Hounslow, on the 28th ult., before the plants were removed into their winter quarters. The frost of the early morning had made the firm busy, and the moveable narrow-gauge railway with the handy low trucks was being worked by all available hands. There were 20,000 pot plants to be removed inside. The plants had well-ripened wood, well set with buds, and most of the plants had been disbudded. They therefore appeared very promising for the production of suitable blooms for marketing. Of the market type Moneymaker—of which the firm has about 200 plants—is among the best of the early varieties. The flowers are white, of large size, and broad petalled. La Triomphante, in white, pink, yellow, and bronze sports, were very prominent. Of Sunshine there was a batch of 5,000 plants, some of them having nine flower buds on each. Queen of the Earlies, and white, yellow, and terra-cotta coloured sports were good. Mrs. F. Judson, Miss A. Byron, Improved Ryecroft, Ryecroft Glory, Mrs. J. Thompson, Lord Brooke, Western King, Nellie Pockett, and Souvenir de Petite Amie are all favourite varieties for market supply. *Stephen Castle.*

Proposed Federation of Gardeners' Mutual Improvement Societies.—The forthcoming meeting of delegates on October 16th will be held at the Royal Horticultural Society's Hall, Vincent Square, at 4 15 p.m. Mr. Reid, president of the Croydon Society, will preside. I have heard from a number of local societies who are sending delegates to the meeting, whilst others at a longer distance from London write me approving of the proposal, but cannot send representatives owing to the expense of travelling, &c. *Harry Boshier.*

An Interesting Rock Garden.—I have seen many good rockeries and have constructed some, but the one at Swaylands House Gardens, Penshurst, Kent, is beyond anything of the same kind known to me. Mr Hosier, the gardener, told me that nearly £80,000 had been spent on this rock garden alone. It was begun in 1891 and was finished about four years ago, and more than 8,000 varieties of plants have been placed upon it. The gardens at Swaylands House are very large and extremely beautiful. *W. Earp, Bayham Abbey Gardens.*

Rare British Fungus—Latticed Stinkhorn.—I have just received intimation, and verification, of the appearance of Clathrus ancellatus in a garden at Truro during the past June and July. It was stated to range from the size of a pheasant's to that of an ostrich's egg. "The shape of a puff ball, only not solid, but just a network. It was orange in colour outside, and bright red inside." It came up under a Datura and some shrubs in a dry, sunny border. This fungus has only rarely been found in this country, and mostly in the south, as in the Isle of Wight, and at Torquay, and is certainly of a most singular and beautiful form, a figure of which is given in "Plain and Easy Account of British Fungi," plate 19, and also fig. 3 on Worthington Smith's sheet of "Poisonous Fungi." It is reputed to be a virulent poison, and is extremely foetid. *M. C. Cooke, September 29, 1906.*

Some Effects of the Extreme Heat on Vegetation. The summer of 1906 will be remembered as one of the hottest and driest known in this part of Kent. During the three months, June, July, and August, 4·09 inches of rain was registered, with four registrations in the month of September amounting to 1·30 inches. But, although the past summer cannot be said to have been phenomenally dry, it has surely shown a maximum of sunshine over any corresponding period of three months for many years. For the past three weeks leaves have been falling from the Elm, Chestnut, Beech, and Ash in great numbers, and especially is this noticeable in the case of the older trees, many of which are almost bare of foliage. Vegetation during the first week in September presented an appearance such as is usually seen a month later, for the foliage was down and lying in drifts. Pears on south walls are disfigured with sun blisters that range in size from a sixpence to a five shilling piece, and these fruits generally have not grown to their normal size by one-third. The flavour in Pears this season should be very good, and unless the drought has caused a high percentage of grittiness in the flesh, the majority should be entirely to the satisfaction of the most exacting consumer. The general appearance of many of the fruit plantations is such as one would expect to see at least three weeks later. *H. R., Maidstone, September 18, 1906.*

——The past summer will long be remembered as one of the driest for many years, and the remarks on "Rain" (p. 212) will no doubt have been of much interest to many readers. In some parts of Gloucestershire this summer people have been obliged to go three miles to obtain water for drinking purposes, and doubtless many of our large towns have had a considerably reduced supply. The effects of the dry summer are to be seen in the gardens, and nearly all the vegetable crops, including Cabbage, Cauliflower, Turnip, Lettuce, Spinach, Peas, Carrots, Beet, and others have presented a semi-starved appearance. Violet plants, of the single varieties growing on south and west borders, present a crippled appearance, red spider having almost ruined them; but the double varieties on an east border that is partially shaded by tall Elm trees have not suffered to any great extent. This teaches one a useful lesson. Few plants suffer more quickly in a dry season than Violets, and a partial shading is really necessary for them, especially during such a dry season as the past, to obtain a bountiful supply of flowers during winter and early spring. On the farm similar failure must be chronicled. Mangolds had their foliage yellow by the middle of August, while Swedes and common Turnips are much below their normal size at Michaelmas. Pasture lands appear as though they have been without rain for six months, and scarcely a green blade of grass is to be seen, except on the marshes or on very low-lying ground. The corn crop has been exceptionally good, and better than it has been for some years past, which will partly recoup the farmer for the partial failure of his root crops. Up to September 26, and since the beginning of the year, 20.19 inches of rain have been registered here, the month of July proving the driest. In the year 1905, 18½ inches were recorded for a similar period, so that we have had close upon 2½ inches more rain this year than we had last, July of that year proving the driest month with only half an inch. *J. Mayne, Bicton.*

Pelargonium Mrs. Lawrance.—The new Zonal Pelargonium "Mrs. Lawrance" appears to be gaining popularity. It has been mentioned in all the Covent Garden Market reports, both in trade papers and in the *Gardeners' Chronicle*. It is the best variety I have grown, being more compact and free-flowering in habit than "Denmark." The flowers also last longer and are of a very pleasing shade of pink. It was raised by a young nurseryman named Lawrance, a school friend of mine, who was at the time about to be married, and Messrs. Clark, Ltd., of Dover, who first recognised the merit of the new variety, named it after the future Mrs. Lawrance. Some hitch occurred in the matrimonial engagement, and young Lawrance gave up his business and left the country, and so far as I know there is still no "Mrs. Lawrance." The plant was the result of a cross between "Maggie Hollock" and "Hermione." *Collegian, Kent.*

Nymphæa zanzibarensis rosea.—This beautiful rose-coloured Water Lily, which was illustrated in the *Gardeners' Chronicle*, November 25, 1905, from Lord Rothschild's gardens, Tring Park, Tring (gr. Mr. A. Dye), has been almost continuously in bloom in the warm Lily tanks at Tring Park. It proves to be not only one of the most beautiful and free-flowering varieties, but is also a very free grower. One of the plants now in flower was from seed gathered just a year ago. The Hon. Walter Rothschild, M.P., observed the first leaves seven months ago, and the first to bloom is now in flower well within the year from sowing. There is variety of tint in the seedlings, but none have as yet proved finer than the original illustrated. The Nymphæa tanks have many other fine varieties in bloom, from white to blue and rose. One of the finest of the magenta-rose coloured is N. O'Marana, which is large, broad-petalled and much like N. gigantea in shape. *J. O'B.*

The Proposed Champion Vegetable Class.—On p. 215 *Nous verrons* credits me with "asking for something of an extraordinary nature in inviting the Shrewsbury authorities to provide a special class for the vegetable champions." Surely he is aware that I did nothing of the kind, but simply lent my support to the suggestion of *A. D.* He also suggests that I must have forgotten the Chiswick and Edinburgh classes which were provided for such a purpose. I ask *Nous verrons* in what sense were either of these considered as championships? These classes were provided in the ordinary way with good prizes offered, and were sternly competed for in both instances by many of the best growers, but no suggestion was made in the schedules of either being championships. *Nous verrons'* remarks would almost lead one to infer that they were failures, instead of which they were voted by the judges and Press alike as the finest exhibits of vegetables that had been shown up to that time. *Nous verrons* considers the suggestion of a vegetable championship as extraordinary, and also finds fault with the best growers when they compete in classes

for which their seedsmen offer the prizes, but they do not happen to meet each other. Does *Nous verrons* suggest that these growers should come to some arrangement that they each get their seeds from one or two firms in order that they should meet in competition? This is exactly what they would have to do to meet that idea, or otherwise get seeds from all of them, which would be ridiculous. For my part, I would sooner give up exhibiting than have to do anything of the kind. *Nous verrons* asks how many would compete in such a class. Well, I venture to say it would be well competed for, and all the best growers would be honourably bound to enter or lose their reputation. He need not fear of it being a one-man show; besides, it affords a splendid opportunity for many of the older growers to compete there and relieve them of the necessity of competing in the smaller classes, thus giving greater encouragement to beginners, of whom there are too few. The suggestion that all vegetables staged should be correctly named is exactly what we find in nearly all schedules, and is nothing new. It is another thing, however, to name them correctly and to get the general public to believe they are correct, and it requires more than the mere naming to make them believe that Cranston's Excelsior Onion is not Ailsa Craig, or vice versâ; Duke of Albany Pea, the Alderman, Perfection Tomato, Eclipse or the Polegate, and so on. I venture to say that such varieties, if treated to exceedingly high culture, their true character becomes somewhat altered, and if selected to a particular type according to the exhibitor's own ideas, they may seem, and reasonably seem, quite another variety, and yet be perfectly true to name. The exhibitor may then be blamed for his honesty. *James Gibson.*

——To me it seems hard on the Shrewsbury Society when we find even Mr. Beckett bewailing its want of liberality in not providing a class of such magnitude as would satisfy these champions. Perhaps the committee is waiting to hear what sum in prizes will satisfy competitors! *H. W. W.* shows what liberality is shown at Shrewsbury in respect to vegetables. There are a number of classes in open competition at this society's show, and who provides them is surely quite immaterial to exhibitors. Mr. Beckett admits that the vegetables generally seen at Shrewsbury are of an extraordinary character; hence my surprise that Mr. Gibson seemed dissatisfied. This correspondence illustrates how difficult it is to satisfy exhibitors. At Shrewsbury there are more classes, more value offered in prizes, and the finest produce, yet a drastic alteration is required. I may well sign myself *Nous verrons.* Yes, I well remember the Chiswick and Edinburgh shows, and know also what little chance a small grower had at either place. Classes should be reserved for smaller growers. The public would be equally well interested in seeing Mr. Brown stage a collection from his two-acre plot as they would be in witnessing the display of the giants from their ten-acre fields. No one will deny that it is all a question of money and space in the production of choice vegetables. Mr. Beckett says: "I decided to compete for the two classes, etc., immediately the schedule was issued." Will Mr. Beckett tell us if he kept his decision a secret, or did he tell his exhibitor friends of his intention? If he will take the public into his confidence now, they can judge for themselves. Now, as to the wrong labelling of some of the dishes, I am pleased to find that Mr. Beckett does not infer that wrong naming has never been *practised*. This is surely a tacit admission that such is done (of course I do not say by himself); but mark the word he uses—*practised*. Surely there is great similarity in many varieties, and even Mr. Beckett, with his vast experience, would be puzzled to know sometimes where Tweedledum ends and Tweedledee begins? Does Mr. Beckett think there is as much similarity in varieties of Chrysanthemums as there is in Tomatos or even in Runner Beans or Onions? *Nous verrons.*

FIG. 102.—PRIMULA COCKBURNIANA; FLOWERS ORANGE-COLOURED.

The Ray Asters.—This is one of those very pretty varieties of the summer annual Asters which should be found in every garden, and especially where Asters are grown for cutting. The petals or rays are rolled up at the margins as in the so-called "thread" Chrysanthemums, to which the flowers bear a strong resemblance: and the first flowers begin to expand towards the end of the month of August. Herr. F. Roemer, Quedlinburg, has for a number of years been endeavouring to raise an earlier flowering variety, and he has at last raised that which he rightly names the July Strahlen (Ray) Aster, which begins to bloom the first week in that month, and lasts for a long time in perfection of bloom. The colours thus far raised by Herr Roemer are light blue, white, and pale pink, to which he hopes to add salmon pink and cinnabar carmine. Some flowers in all three colours, that I saw in a Norfolk garden, pleased me greatly. *F. M.*

Scarcity of Dessert Apples.—For the dessert after Worcester Pearmain is finished there is a great scarcity of desirable Apples. Previously we have Lady Sudeley, Beauty of Bath, and Devonshire Quarrenden, all of which possess that most desirable point for commercial purpose, rich colour. After these there is a lack of variety until King of the Pippins is ready at the end of October. I am aware there are two or three that may be supposed to fill the gap, such as Duchess's Favourite and Summer Golden Pippin, but these are much too small to satisfy the ordinary fruiterer. At one time I had great faith in Benoni and planted it largely, but I regret to say it is much too shy in bearing to be of value, although of a desirable tone of flavour, and ripening quite at the right time—end of September. Ben's Red I have fruited this year for the first time, and value it highly. It grows to a moderate size, is richly coloured, and of satisfactory flavour. If this Apple could be obtained in large quantities just now it would be a desirable variety. Langley Pippin is another good Apple, and ripens a few days before Worcester Pearmain, and has all the attributes of a desirable market Apple. James Grieve is said to be of a desirable character. Sufficient can hardly be known of it yet to warrant its being largely planted. King Pippin is an excellently flavoured variety, but too small. The catalogue I have in front of me contains no fewer than one hundred and thirty varieties, and even then there is not what is exactly required at this season. It is not so with kitchen varieties, for in these there is abundant choice of varieties having excellent quality even in September and October. *E. Molyneux.*

The Late Dean Hole.—A memorial to the late Dean Hole was dedicated by the Bishop of Rochester in the cathedral of that city on the 29th ult. The memorial is in the form of a recumbent figure of the late Dean in statuary marble. He is represented in his robes with eyes closed and hands clasped, and at his feet is a wreath of his favourite Roses. Mr. F. W. Pomeroy, A.R.A., is the sculptor of the memorial, which rests upon an altar base of alabaster designed by Mr. C. Hodgson Fowler, F.S.A.

SOCIETIES.

ROYAL HORTICULTURAL.

Fruit and Vegetable Committee.

SEPTEMBER 28.—A deputation from the FRUIT AND VEGETABLE COMMITTEE visited Wisley Gardens on the 28th ult. to examine Potatos and Kales. The trial of Potatos, although a very extensive one, has proved to be unsatisfactory, arising from spring cold and summer drought, and in selecting from the large collection a few varieties to be presented in a cooked condition to the full committee on the 9th inst., the deputation wish in no way to reflect on others, but simply to show that under existing conditions these few were the best. Several well-known varieties previously certificated were seen in good form also. The selected ones are Klondyke, Alpha, Russett Queen, Conquering Hero, The Scott, Breydon's Crompion, Dr. Gillespie, Ardcairn Beauty, and the popular Up-to-date, a splendid variety which, oddly enough, has not yet received an award.

If, however, the Potato trial was unsatisfactory, that of Winter Kales is exceptionally fine. Under no conditions could better examples in great quantity be seen. The Kales include the well-known Scotch types, tall and dwarf Arch Kales, green and purple, these latter showing exceptional merit, the broad-leaved or Chou de Milan type, Asparagus, Breda, Cottagers, and others. Whilst some few were just now exhibiting special excellence of stock and quality in growth and leafage, it was agreed that no true test of the merits of any one variety as a winter green could be furnished until the winter was well advanced, as, apart from productiveness, capacity to withstand severe weather and frosts was an important feature.

Scientific Committee.

SEPTEMBER 25.—*Present*: Mr. G. Massee, F.L.S., V.M.H. (in the chair); Dr. A. B. Rendle, Messrs. E. M. Holmes, G. Nicholson, J. T. Bennett-Poë, G. S. Saunders, E. A. Bowles, J. Douglas, W. B. Hemsley, and F. J. Chittenden (hon. sec.).

Disease of Iris from Kew.—Mr. MASSEE reported that the disease of Iris referred to him at the last meeting was due to the fungus Heterosporium gracile (Saccardo). The best treatment is to spray early in the season with dilute Bordeaux mixture. Other fungicides seem to be of no avail against this fungus. Injured leaves should be cleared away, otherwise there will be a return of the disease next season; probably even with these precautions the disease will return.

Leaves of Chrysanthemum, &c.—Mr. HOLMES showed leaves of Chrysanthemum having pale brown patches and lines upon them, particularly near the midrib. Mr. SAUNDERS took them for further examination.

Montbretias Dying.—Mr. E. A. BOWLES showed some further specimens of dying Montbretias similar to those shown at a recent meeting, in which the first symptom of trouble is the browning of the leaves. The disease appears to be a physiological one, no specific organism, either animal or vegetable, having been found associated with it.

Rust on Plum Leaves.—Mr. J. DOUGLAS showed leaves of Plum very badly infested with the Plum rust, Puccinia pruni. No leaves should be allowed to remain on the ground through the winter, as upon these the spores of the fungus hibernate, and the trees should be sprayed with a fungicide in the spring.

"Wheatear" Sweet William.—Mr. DOUGLAS also showed on behalf of Rev. W. WILKS an inflorescence of Sweet William, in which all the flowers were malformed as in the "Wheatear" Carnation; the bracts being repeated again and again at the expense of the flower.

Black Fungus on Apple Leaves.—Apple leaves covered by a black, sooty material were received from Brumerton, Norwich. The cause of the appearance was the presence of a species of Fumago upon the leaves, a fungus which grows upon the honeydew formed through the attacks of aphis. Attention should be paid to keeping the aphis in check. The variety King of the Pippins was the one chiefly attacked.

Apple and Wasps.—Rev. Prof. G. HENSLOW sent some Apple skins left after wasps had consumed the whole of the cellular tissue, abandoning the core and particles of grit which formed a layer at the bottom. After falling from the tree the skins became the domiciles of earwigs. He also sent the following note: "It has occurred to me that the presence of 'grit' disclosed by the wasps not being able to eat it (but undiscoverable to us human beings, being too small), proves the last differentiation between Apples and Pears to go! I take it that 'grit' is the degraded state of an original stone fruit; the cores being the internal lining only of the carpels. In a Pear which has decayed the grit is clustered round the five carpels, resembling that of other stone fruits; but in Apples it has degraded so much further that only wasps can discover it!" The members of the Committee agreed with Dr. MASTERS, who wrote: "This is a most ingenious idea; but as the 'grit' or mechanical tissue in a Pear is not confined to the neighbourhood of the carpels, but diffused in the parenchyma, and especially beneath the epidermis, I cannot quite see how it can be phylogenetically connected with the stone. The 'grit' is an integral portion of the fruit branch, not of the carpels."

NATIONAL CHRYSANTHEMUM.

OCTOBER 3, 4.—The early autumn exhibition of this Society was held on the foregoing dates in the Crystal Palace, Sydenham. The number of entries and the displays generally were equal to those of former years, notwithstanding the very exceptional weather of the past summer. It was interesting to note that Scottish exhibitors met with much success in the classes for flowers from the open. Among several seedling varieties, four were of sufficient merit to obtain the Society's First-Class Certificate, and these will be found described below.

GROUP CLASSES.

Class 1 called for a group of Chrysanthemums arranged for effect, to be shown in the form of a half-circle, and to occupy an area of 11 feet by 7 feet. Suitable decorative foliage plants were allowed in the group. Mr. Howe (gr. to Lady TATE, Park Hill, Streatham Common) had the better of two, the other competitor being Mr. FOSTER, Nunhead Cemetery, S.E., who was awarded the 2nd prize. Mr. HOWE staged tall plants of large flowering Japanese varieties—Mrs. W. Knox, Mrs. A. H. Lee, Geo. Mileham, &c., among which were interspersed Ferns, Palms, Asparagus, &c., while Mr. FOSTER had dwarfer plants of yellow and white Niveum intermixed, and relieved with decorative foliage subjects.

Only one exhibit was forthcoming in a class for 12 pot plants of early flowering Chrysanthemums, this being shown by Messrs. WELLS & Co., Merstham, Surrey, but, as the majority of the flowers were unopened, it only received the 2nd prize.

CUT BLOOMS.

The principal class for cut blooms was that for 24 blooms of Japanese Chrysanthemums in not fewer than 18 varieties, not more than two flowers of any one kind to be included. Two groups only were staged, and these were put up by Mr. A. C. Horton (gr. to T. L. BOYD, Esq., North Frith, Tonbridge, Kent) and Mr. G. Halsey (gr. to Mrs. JEREMIAH LYON, Riddings Court, Caterham Valley), who were awarded the 1st and 2nd prizes in the order named. The premier collection included some good flowers, notably those of Marquis V. Venosta, Mrs. H. Emmerton, Mrs. T. Dalton, Mafeking Hero, Mrs. Geo. Mileham, Alice Byron, and Bessie Godfrey. The 2nd prize collection contained good specimens of Mrs. Geo. Mileham (a fine, full flower), General Hutton, and Miss Elsie Fulton.

The smaller class of 12 Japanese blooms was contested by four competitors. The quality of the best three exhibits in this class was very good, the flowers shown by Mr. W. Mease (gr. to A. TATE, Esq., Downside, Leatherhead) being a remarkably fine dozen, and these were awarded the 1st prize. A magnificent flower of Mrs. W. Knox (sulphur yellow) deserves special mention, although Eric Crossley, President Viger, Sappho, Mrs. A. T. Miller, Mrs. Geo. Mileham, Miss Elsie Fulton, Bessie Godfrey, and A. R. Knight were also remarkably good. 2nd, Mr. T. Stevenson (gr. to E. MOCATTA, Esq., Woburn Place, Addlestone); 3rd, Mr. J. Kirkwood (gr. to L. WORMALL, Esq., Grass Park House, Finchley, N.).

VASE CLASSES.

The class for two vases, each containing 12 blooms of large flowering Chrysanthemums, and decorated with suitable foliage, brought forth a good display, although not so large as might be wished. Three growers competed, the premier award being taken by Mr. J. KIRKWOOD for very fine quality flowers, relieved with Asparagus Sprengeri, Ampelopsis Veitchii, Cyperus longifolia, Arundo donax, Ferns, &c. 2nd, Mr. G. HALSEY, with slightly smaller flowers, that were very bright in colour.

The best 12 bunches of early-flowering Pompon Chrysanthemums, arranged in vases, in not fewer than eight varieties, were shown by Mr. E. F. SUCH, Maidenhead, who had larger flowers than the other exhibitor, Mr. D. B. CRANE, Archway Road, Highgate, N., who secured the 2nd prize. Mr. SUCH had Anastasia (rosy purple, very finely coloured), Yellow Lefort, Blushing Bride, Mrs. Selly (rose pink), &c.

CHRYSANTHEMUMS FROM THE OPEN.

Two classes were provided for border varieties from the open, the one for a dozen bunches of flowers that were not disbudded, the other for a similar number of bunches disbudded.

In the first-named class good competition was seen, and six exhibits filled a long table. The two principal prizes were carried off by Scotch growers, Mr. JOHN SMELLIE, Pansy Gardens, Busby, and Mr. GEORGE BOWNESS, Riverside Nursery, Busby, who won the 1st and 2nd prizes respectively. The flowers from this town were certainly ahead of any of the others seen in this class, due, no doubt, to the heavier rainfall experienced in Scotland this summer. Mr. SMELLIE had Nina Black (bronze), White Massee (really a shade of yellow), Goacher's Crimson, Polly (bronzy yellow), Improved Massee (very fine), Mrs. Baird, &c.

A vase of Roi des Blancs and another of Nina Black, in Mr. BOWNESS's group, were of especial merit. 3rd, Mr. T. BRAZIER, Caterham Hardy Plant Nursery, Caterham.

Not so many groups were seen in the class for disbudded flowers, four exhibits being staged; and of these that shown by Messrs. W. WELLS & Co., Merstham, Surrey, easily outdistanced the others in point of quality. They had some splendid flowers, their size being remarkable. Pale Rose, Polly (incurved, bronze), Lily, Goacher's Crimson, Mytchett's Pet (reddish brown), and Jimmie are some of the best examples. The only fault we had to find with this group was in the manner of its staging, the bunches were too crowded, and were not sufficiently elevated.

AMATEURS' CLASSES.

Mr. T. W. Stevens (gr. to W. H. STONE, Esq., Lawrie Park, Sydenham) was the only exhibitor in a class for 12 blooms of Japanese Chrysanthemums in distinct varieties, and he was awarded the 1st prize.

Better response was seen in the class for 12 bunches of early-flowering Japanese varieties, the 1st prize being secured by Mr. A. HOGGAN, Busby, near Glasgow, although the 2nd prize exhibit ran close for premier position. It was shown by Mr. W. H. CLARK, 224, High Street, Slough. Mr. HOGGAN also won in the class for 12 bunches of early-flowering Pompon Chrysanthemums, in bunches of five blooms.

DECORATIVE CLASSES.

Miss COLE, The Vineyard, Feltham, arranged the best decorated table in the open classes, and she also showed the best three epergnes of Chrysanthemums in Class 12, the best hand-basket of Chrysanthemums arranged with other foliage, the best hand-basket of flowers other than Chrysanthemums and Roses, and the best hand-basket of autumn foliage and berries from the open. Mr. C. CONN, Birmingham, staged the best table decoration in the Amateurs' Classes.

CERTIFICATED FLOWERS.

Mrs. J. R. Scott.—An ivory white market variety of considerable size. The flowers are somewhat globular in shape. The growths attain to a height of about 4 feet 6 inches, and they are said to be very free in flowering; it is claimed that some of the plants have carried two dozen good blooms. Shown by Messrs. LOWE & SHAWYER, Uxbridge.

Tapis de Neige.—A pure white decorative variety. It was shown as a pot plant, without disbudding. The height is about 2 feet 6 inches,

and the growths are crowned with a profusion of flowers. Shown by Mr. H. J. Jones, Lewisham.

Hector.—A decorative variety, with narrow florets of a soft pink shade. Shown by Mr. G. Bowness, Busby, N.B.

Dorothy Gouldsmith.—A Japanese seedling from Mrs. F. W. Vallis. The florets are exceptionally long; some of the longer were almost a foot in length. The colour is sulphur yellow. The flowers as shown were very large, and the centres had many undeveloped florets. Shown by Messrs. W. Wells & Co.

Non-Competitive Groups.

Mr. H. J. Jones, Hither Green, Lewisham, staged an attractive group of Chrysanthemums, interspersed with perennial Asters. Blooms of Mrs. W. Knox (sulphur yellow) and of Mrs. A. T. Miller (white) were remarkably fine (Gold Medal.) Mr. Eric F. Such, Royal Berkshire Nurseries, Maidenhead, displayed a number of border Chrysanthemums in the best varieties. (Silver-Gilt Medal.) Messrs. T. S. Ware, Ltd., Ware's Nursery, Feltham, showed a very large exhibit of Chrysanthemums, Dahlias, tuberous-rooting Begonias (very fine), Carnations, Pentstemons, &c. (Gold Medal.) Mr. S. Mortimer, Rowledge, Farnham, Surrey, exhibited popular varieties of winter-flower Carnations. (Silver-Gilt Medal.) Mr. Frank Brazier, Caterham Hardy Plant Nursery, Caterham, showed hardy flowers, Dahlias, Chrysanthemums, &c. (Large Silver-Gilt Medal.) Messrs. Hugh Low & Co., Bush Hill Park, Enfield, N. exhibited flowers and plants of American Carnations. (Small Silver Medal.) Messrs. J. Peed & Son, West Norwood, London, staged a circular group of pot Chrysanthemums, and boxes of tuberous-rooting Begonias. (Large Silver Medal.) Messrs. Hobbies, Ltd., Dereham, Norfolk, staged Dahlias, Chrysanthemums, and Roses. (Silver-Gilt Medal.) Messrs. Wells & Co., Merstham, Surrey, arranged a diamond-shaped group of border and Japanese Chrysanthemums of exceptional quality. (Gold Medal.) Messrs. J. Cheal & Sons, Crawley, exhibited single, Pompon, and Cactus Dahlias and hardy flowers. (Large Silver Medal.)

THE WEATHER.

THE WEATHER IN WEST HERTS.

A splendid rain.—The days during the past week were all warm, and two of the nights very warm. Previously there had been a good many cold nights, and on one of these the exposed thermometer indicated five degrees of frost—the greatest cold as yet this autumn. The ground has again become warm, the temperature at 1 foot deep being three degrees, and at 2 feet deep four degrees, higher than is seasonable. After nearly a fortnight of dry weather there came two consecutive days which were exceptionally wet, the fall on each of those days amounting to an inch—a very rare occurrence at any period of the year. It is somewhat remarkable that in such a dry season there should have been two occasions when the rainfall has been exceptionally heavy. The first took place on June 28, when there was a record fall of 2½ inches, and the other on the two first days of the present month, when 2 inches fell. Taking these two amounts together, representing as they do the fall of three days only, the amount of rain which then fell is nearly 2 inches in excess of the total rainfall of July, August, and September taken together. To show the difference at this season of the effect on percolation of uncropped soil, and that on which short grass is growing, it may be stated that during the past week less than half a gallon of rain-water came through the turfed soil percolation gauge, whereas as much as six gallons found its way through the 2½ feet of soil in the bare soil gauge. The sun shone on an average for nearly 6¾ hours a day, or 2½ hours a day longer than is usual at this season. The winds have been mostly light, but on two nights the wind rose and the gusts were for a time rather strong. The mean amount of moisture in the air at 3 o'clock in the afternoon fell short of a seasonable quantity for that hour by 6 per cent.

September.

Singularly warm, dry and sunny.—In the last twenty years there have been only three Septembers warmer than that month this year. The highest temperature, 92°, was a very remarkable one, being the highest yet recorded here at any period of the year. Rain fell on only eight days, all but one in the middle of the month, to the total depth of 1¼ inches, or less than half the average rainfall for September. This was with two exceptions the sunniest September of which I have here any record, the duration of bright sunshine exceeding the average for the month by 1¾ hours a day. At no time did the mean velocity of the wind in any hour exceed the 13 miles. The atmosphere continued unusually dry, the mean amount of moisture in the air at 3 p.m. being less than the average by 7 per cent.

The Summer Rainfall.

The total rainfall of the summer half of the drainage year, which ended with last month, fell short of the average quantity for those six months by 5½ inches, which is equivalent to a loss of 25 gallons of rain on each square yard of any garden. *E. M., Berkhamsted, October 3rd, 1906.*

MARKETS.

COVENT GARDEN, October 3.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asters, per dozen bunches ...	1 6- 2 6	Lilium longiflorum	3 0- 4 0
Bouvardia, per dz. bunches ...	4 0- 6 0	Lily of the Valley, p. dz. bunches	6 0- 9 0
Calla æthiopica, per dozen ...	2 6- 4 0	— extra quality ...	9 0-12 0
Centaurea cyanus, doz. bunches	1 0- 2 0	Marguerites, white, p. dz. bunches	2 0- 3 0
— suaveolens	3 0- 4 0	— yellow, per dz. bunches ...	2 0- 3 0
Coreopsis grandiflora, per doz. bunches	1 6- 2 0	Mignonette, per dz. bunches ...	2 0- 3 0
Carnations, per dozen blooms, best American various	1 6- 3 0	Montbretia, dozen	2 0- 3 0
— smaller, per doz. bunches	1 0- 2 6	Odontoglossum crispum, per dozen blooms	2 6- 3 0
— Malmaisons ...	3 0- 8 0	Pancratiums, doz. bls. ...	3 0- 4 0
Cattleyas, per doz. blooms ...	9 0-12 0	Pelargoniums, show, per doz. bunches ...	3 0- 5 0
Chrysanthemums, per dz. blooms	1 0- 2 6	Zonal, double scarlet ...	3 0- 4 0
— small blooms, per doz. bnchs.	3 0- 6 0	Pyrethrums, dozen bunches	1 6- 2 6
Dahlias, per dozen bunches	2 0- 3 0	Roses, 12 blooms, Niphetos	1 0- 2 0
Eucharis grandiflora, per doz. blooms ...	3 0- 4 0	— Bridesmaid ...	1 0- 1 6
Gardenias, per doz. blooms... ...	1 0- 1 6	— Kaiserin A. Victoria ...	1 0- 2 0
Gladiolus, various, per dz. bnchs.	9 0-12 0	— Caroline Testout ...	1 0- 2 0
— brenchleyensis, per doz. spikes	1 0- 2 0	— C. Mermet ...	1 6- 2 6
Gypsophila elegans, per doz. bunches	2 0- 3 0	— General Jacqueminot ...	1 0- 1 6
— paniculata ...	2 6- 4 0	— in bunches, per dozen ...	3 0- 5 0
Gaillardias ...	2 0- 3 0	— Liberty ...	1 0- 2 0
Heather, white, per doz. bunches ...	3 0- 6 0	— Mad. Chatenay	1 0- 2 6
— purple ...	2 0- 3 0	— Mrs. J. Laing	1 0- 2 6
Lilac, white, per bunch ...	2 0- 3 0	— from the open, various kinds, per dz. bnchs.	2 0- 5 0
Lilium auratum	2 0- 3 0	Scabiosa, per doz. bunches ...	2 0- 3 0
— candidum, per bunch ...	2 0- 3 0	Statice, per dozen bunches ...	4 0- 6 0
— lancifolium, rubrum and album	1 6- 2 0	Stephanotis, per dozen trusses	3 0- 5 0
— tigrinum, per bunch ...	1 6- 2 0	Stocks, double white, per doz. bunches ...	2 0- 4 0
		Tuberoses, per dz. blooms ...	0 4- 0 6
		Violets, per dozen bunches	1 6- 2 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Ampelopsis leaves, p. dz. bunches	1 6- 2 0	Ferns (French), dz. bunches	2 0- 5 0
Asparagus plumosus, long trails, per doz.	5 0-10 0	Hardy foliage (various), per dozen bunches	2 0- 3 0
— — medium, bunch ...	1 6- 2 0	Hardy Grasses, per doz. bunches	2 0- 3 0
— — short sprays per bunch ...	0 6- 0 9	Ivy leaves, bronze	1 6- 2 0
— Sprengeri ...	0 6- 1 0	— long trails, per bundle ...	1 0- 2 0
Adiantum cuneatum, doz. bun.	4 0- 6 0	— short green, doz. bunches	2 0- 3 0
Berberis, p. bunch	2 6- 3 0	Moss, per gross	5 0- 6 0
Croton leaves, per bunch	1 0- 1 6	Myrtle, per dozen bunches	2 0- 5 0
Cycas leaves, each	1 6- 2 0	Pernettya, with berries, per bunch	0 4- 1 0
Fern, English, p. dozen bunches	1 0- 2 0	Smilax, p. dz. trails	2 0- 5 0

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

	s.d. s.d.		s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0	Ericahyemalis, per dozen ...	15 0-18 0
Aralia Sieboldi, per dozen ...	4 0- 6 0	— gracilis, p. dz.	12 0-18 0
— larger	9 0-12 0	— nivalis	18 0-24 0
Araucaria excelsa, per dozen	12 0-30 0	Eulalia japonica	12 0-15 0
Aspidistras, green, per dozen ...	18 0-30 0	Euonymus, per dz.	4 0- 9 0
— variegated, per dozen	30 0-42 0	Ferns, in thumbs, per 100	7 0-10 0
Asparagus plumosus nanus, doz.	6 0- 9 0	— in small and large 60's	16 0-25 0
— Sprengeri, doz.	6 0- 8 0	— in 48's, per dozen ...	4 0-10 0
— tenuissimus per dozen ...	8 0-10 0	— in 32's, per dozen ...	10 0-18 0
Asters, per dozen	3 0- 6 0	Ficus elastica, per dozen ...	9 0-18 0
Bouvardias, per dz.	6 0- 8 0	— repens, per doz.	4 0- 6 0
Chrysanthemums, best, per doz.	12 0-24 0	Fuchsias, per doz.	4 0- 6 0
— smaller, per doz.	5 0- 8 0	Hydrangea paniculata, per dozen	9 0-12 0
Clematis, per doz.	8 0- 9 0	Kentia Belmoreana, per dozen	12 0-18 0
— in flower	9 0-12 0	— Forsteriana, per dozen ...	12 0-21 0
Cocos Weddelliana, per dozen	9 0-18 0	Latania borbonica, per dozen ...	12 0-18 0
Coleus ...	3 0- 5 0	Lilium auratum ...	18 0-24 0
Crotons, per dozen	12 0-30 0	— longiflorum, per dozen	12 0-18 0
Cyperus alternifolius, dozen ...	4 0- 5 0	— lancifolium, per dozen	18 0-21 0
— laxus, per doz.	4 0- 5 0		
Dracænas, per doz.	9 0-24 0		

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

	s.d. s.d.		s.d. s.d.
Lily of the Valley, per dozen ...	18 0-30 0	Selaginella, dozen	4 0- 6 0
Marguerites, white, per dozen ...	4 0- 8 0	Solanum capsicastrum, per doz.	8 0-12 0
Pelargoniums, Zonals, pr. dz.	3 0- 5 0	Spiræa japonica, per dozen	6 0-10 0
Physalis Franchetti, each ...	1 6- 3 6	Verbena Miss Willmott, per doz.	4 0- 6 0
Roses, per dozen ...	12 0-18 0	Veronicas, per doz.	3 0- 6 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples (English), ½ sieve... ...	1 6- 3 6	Lychees, per box	1 0- 1 2
— English, per bushel (40 lbs. to 50 lbs.) ...	3 0- 5 0	Melons, each	1 0- 2 6
Bananas, bunch:		— Valencia ...	6 6- 9 6
— West Indian, red	1 0- 6 0	— Rock ...	2 0- 3 6
— No. 1 quality ...	6 6- 7 6	Mangos ...	4 0- 8 0
— No. 2 quality ...	5 6- 6 6	Nuts, Cobnuts, per doz. lbs. ...	4 6- 5 0
— Extra quality ...	8 0- 8 6	— Brazils, new, per cwt.	45 0 —
— Giants	9 6-10 6	— Barcelona, per bag ...	21 6 —
— Jamaica ...	4 6- 6 0	— Walnuts, per bag ...	18 6 —
— Loose, per dz.	0 8- 1 3	— per Grenoble bags ...	7 0-12 0
Blackberries, peck	2 0- 2 6	— Cocoa nuts, 100	10 6-13 6
Cranberries, per case	11 0-11 6	Oranges, per case:	
Damsons, ½ sieve	6 0- 7 6	— Jamaica ...	8 0-10 0
Figs, per dozen ...	1 0- 1 3	Peaches (English), per dozen	6 0-15 0
Italian, box ...	0 10- 1 3	— French, boxes	1 0- 2 0
French, p. box	0 9- 1 2	Pears (English), ½ sieve ...	1 6- 4 0
Granadillas, dozen	2 0- 2 6	— English, per bushel (56 lbs.)	3 0- 8 0
Grape Fruit, case	9 0-12 0	— American, barrels ...	18 0-30 0
Grapes (English), Alnwick Seedling, per lb.	0 10- 1 0	— French, Williams, box	3 6- 4 6
— Gros Maroc per lb. ...	1 0- 1 3	— French, Williams, crates	7 0- 9 6
— Black Hamburg, per lb. ...	0 6- 1 3	— Californian, per case ...	7 0-10 0
— Alicante, p. lb.	0 6- 1 0	Pineapples, each	1 6- 3 0
— Gros Colmar, per lb. ...	0 9- 1 6	Plums (English), ½ sieve (28 lbs.)	4 0- 8 0
— Muscat, per lb.	1 0- 3 0	— French, box	0 8- 1 3
— Lisbon, cases	6 0- 9 6	— French, ½ sieve	3 0
— Almeria, barrels ...	8 0-12 0	— Californian boxes ...	7 6- 9 0
Lemons:			
Messina, case	12 0-15 0		
Naples, per case	30 0-45 0		

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes (French), per dozen	2 3 —	Mushrooms (house), per lb.	0 10- 1 0
Aubergines, per dz.	2 0 —	— outdoor	0 4- 0 6
Beans, home-grown, p. bushel (40 lbs.) ...	6 0 —	— Buttons, per lb.	0 10- 1 0
Beetroot, bushel	1 6 —	Mustard and Cress, per dozen pun.	1 0- 1 6
Brussels Sprouts, per ½ bushel	2 6 —	Onions (Valencia), case ...	6 6 —
Cabbages, per tally	3 0 —	— Egyptian, bag	4 0 —
— red, per dozen	2 0 —	— pickling, per bushel ...	3 6 —
Carrots, French pad	3 0 —	— French, ½ bag	2 6 —
— per bag, unwashed	2 0 —	— Dutch, bag ...	4 0 —
— washed	3 0 —	Parsley, 12 bunches	1 6- 2 0
Cauliflowers, per tally	7 0- 9 0	— ½ bushel	1 6- 2 0
Celery	1 0- 1 6	Salsafy, per dozen bundles	3 6 —
Cress, Chervil, p. lb.	1 6- 2 0	Tomatos:—	
Cucumbers, p. flat, 2½ dozen	6 6 —	— English, per 12 lbs.	3 3- 3 6
— 3 dozen, small	5 0- 6 0	— small, selected, per 12 lbs.	3 0 —
— per dozen ...	2 0- 3 0	— seconds, per 12 lbs.	1 6 —
Endive, per dozen	1 6- 1 9	— outdoor, per 12 lbs.	3 0- 3 3
Horseradish, foreign, per dozen bundles	18 0 —	— French, crate ...	2 6- 3 0
Leeks, 12 bundles	2 6 —	Turnips, per ...	3 0 —
Lettuces (French), per dozen	1 3- 1 6	— bags ...	3 0 —
Marrows, per tally	8 0 —	Watercress, per doz. bunches	0 4- 0 6
Mint, per dozen	2 0 —		

Remarks.—The supply of Grapes is more than equal to the demand. West Indian Red Bananas arrived this week after a lapse of a week or so, and their condition being rather ripe a ready sale is required for them. The first consignment of Brussels Sprouts arrived last week. The average price made was 2s. 6d. per ½-bushel. Trade generally is quiet. *E. H. R., Covent Garden, Wednesday, October 3, 1906.*

Potatos.

Lincolns, 60s. to 70s.; Bedfords 60s. to 65s.; Blacklands, 50s. to 55s.; Kents, 70s. to 80s. *John Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Mr. J. Rochford is the first to send Erica hyemalis; well finished plants make from 15s. to 18s. per dozen. E. gracilis is good from several growers. Messrs. H. Evans & Sons have good plants of the variety that was named alba, but the flowers have a decidedly pink tint; nivalis, however, keeps its character better and is a good white flower. [illegible] has not been so plentiful this season, and those I have seen at nurseries have been backward and unpromising. Chrysanthemums predominate over everything else for early winter use, and well-flowered plants sell at good prices. They did not clear out quite so well on Tuesday, owing to the wet weather, but previously all well-flowered plants [illegible] sold well. It is surprising that growers [illegible] the dwarf and intermediate shoots [illegible] great advantage to buyers, as well as [illegible] care were taken in the selection of stock [illegible] particularly to the varieties which vary (or sport) [illegible] Pelargoniums in well-flowered plants are [illegible] others are now passed for the season. [illegible] foliage plants and Ferns are abundant.

Cut Flowers.

The [illegible] trade is very [illegible] last week and on Monday the [illegible]

prices. Lilium longiflorum went up to 4s. and 4s. 6d. per bunch, but they are now down to 3s., and probably some were sold for less than this. Roses are over plentiful. I was offered good blooms at 6d. per dozen, but this would not be a fair quotation to give, for the same quality will, probably, make 1s. 6d. or 2s. per dozen on Saturday. At closing time this morning there were more Roses left on hand than I have ever seen for some time past. Carnations are also over plentiful; they must be very fine blooms to sell for more than 2s. per dozen, and ordinary samples have to go at very low prices. Chrysanthemums now spoil the trade for all other flowers. We get them in all conditions; the best are very fine. In yellows, there is nothing to equal Miss B. Miller; Queen of the Earlies is a fine white. Crimson Pride is a good red. For flowers of medium size Roi des Blancs is one of the best whites. Asters are still plentiful; the mauve and the purple varieties make better prices than the white flowers. Bouvardias in various colours are plentiful, the most noticeable is Humboldti corymbiflora, but some growers make the mistake of not cutting it soon enough. If cut when the first flower of a truss is open, it will last well and the buds will open in water. *A. H., Covent Garden, Wednesday, October 3.*

CATALOGUES RECEIVED.

[illegible] and Co., 150, 152, Finchley Road, London, N.W.—Bulbs and Flowering Plants.

J. Attwood, Foster Street, Stourbridge—Improved Hot Water Pipes and Coils, Boilers, etc.

B. R. Cant and Sons, The Old Rose Gardens, Colchester—Roses.

John Peed and Son, Roupell Park Nurseries, West Norwood, S.E.—Fruit Trees.

C. R. Shilling, Winchfield, Hants—Bulbs.

H. Barker, Rosemount, Whittlesford, Cambs.—Flowering Plants and Trees.

R. Wallace and Co., Kilnfield Gardens, Colchester—Lilies, Hardy Plants and Bulbs.

FOREIGN.

Frederick Roemer, Quedlinburg, Germany—Novelties in Flower Seeds.

F. Delaunay, 100, Route des Ponts-de-Cé, Angers (Maine-et-Loire), France—Trees, Conifers, Roses, etc.

Soupert and Notting, Luxemburg (Grand Duchy)—Roses.

Ant. Roozen and Son, Overveen, near Haarlem, Holland. Agents: Mertens and Co., 3, Cross Lane, St. Mary-at-Hill, London, E.C.—Dutch and Cape Bulbs, etc.

C. Sprenger, Naples, Vomero, Italy—New and Rare Plants.

ANSWERS TO CORRESPONDENTS.

Begonias: *W. Y.* The appearances are not due to fungus or mite, but to some fault in the cultivation.

Begonias with Clubbed Roots: *J. D.* The plants are affected with eelworm, and as they have been grown in a Melon pit, we suspect they have contracted the pests from the old soil in which the Melons were cultivated. Turn out the inmates of the pit, together with the old soil, and thoroughly cleanse all the interior with a weak solution of carbolic acid and warm water, taking care also to bake the old soil, or remove it to some distant part of the garden. You will be well advised to propagate a new stock of the Begonia, and destroy the affected plants by burning.

Books: *Mrs. H. The Fruit Manual*, by Robert Hogg, is out of print and cannot be obtained unless from the second-hand booksellers.

Bouvardia: *M. P.* The plant is attacked by the parasite Cuscuta europaea. It is a very interesting parasite, and will not cause you very serious loss.

Chrysanthemum Leaves: *J. R.* Cylindrosporium chrysanthemi, a minute fungus, is injuring the foliage. Spray with a rose-coloured solution of Condy's fluid.

Coloured Bean: *G. C.* The variety is Firefly.

Cucumbers: *E. J. M.* The scaly Cucumber is the result of some irregular treatment. There are no fungi or insects concerned in the disfigurement.

Dahlia Daisy Staples: *F. C.* This variety was shown by Messrs. J. Carter & Sons.

Double Flowers: *T. F. R.* Double-flowering varieties have frequently arisen from the influence of high cultivation upon plants that previously produced single flowers only. Occasionally double flowers have arisen as seedling or vegetative sports, and have then been selected and fixed by the care of the cultivator. For information on the other questions see *Plant Breeding*, by L. H. Bailey, price 4s. 4d. post free, obtainable from our publishing department.

Flowers for Cross-breeding: *A New Reader.* At the present time more profit is obtained from the successful crossing of Orchids than any other section of plants, but to be in a position to engage in this work the cross-breeder must have a collection of the finest species and varieties to work upon, and possess an intimate knowledge of what has been already effected in the different genera. A novice would hardly be likely to make much profit until he has spent many years at the work, for it should be remembered that almost all the skilful cultivators of Orchids are also engaged in the raising of seedling hybrids and varieties, most of which are from carefully selected crosses. The raising of seedling varieties of any popular plant, however, is profitable in proportion to the degree of success obtained by the individual breeder, with such plants, for instance, as Roses, Narcissus, Dahlias, Carnations, Sweet Peas, &c.

Fumigating with Tobacco Paper: *T. A.* If you have become thoroughly used to the nicotine vaporisers we are unable to sympathise with your desire to go back to the old system of burning tobacco paper, which is certainly more dangerous to the plants, and is also most disagreeable, if not positively injurious to the operator. The quantity of tobacco paper requisite varies according to the degree in which the glass and woodwork are capable of excluding air, and the amount of wind blowing at the time of the operation. The general practice used to be to employ as many "machines," as they were termed, as were thought necessary, each of which was under the care of a separate man, and the "machines" were withdrawn as soon as the structure was so full of smoke that one was unable to see through it. All the plants should be perfectly dry in the leaf before they are subjected to fumigation, and during the process extreme care must be exercised to prevent the paper from flaring, which would be likely to scorch the plants nearest to the fumigator. Do not commence fumigation until after sunset; select a quiet evening, when the weather is inclined to be wet, and it will be better to apply two moderate fumigations on successive evenings rather than one severe application.

Grapes for Naming: *Constant Reader.* We cannot undertake to name Grapes from a few berries only; you must send whole bunches of characteristic growth and shape, as these form valuable guides in determining the variety.

Greenhouses and the Glazing: *T. A.* The moisture you have observed on the outside of the glass is caused by the panes not fitting so closely together as they might do. The hot atmosphere of the house rises to the top of the structure and is replaced by cooler and heavier air that finds its way in through the crevices at the doorway and other possible inlets. The hot atmosphere, which is generally in a more or less moist condition, escaping through the small spaces between the panes is immediately met by the cooler atmosphere outside, and, becoming cooler, is unable to support the amount of moisture it could do previously, hence the moisture is condensed at the point of outlet.

Midland Reafforestation Society: *Gardener.* Address: Professor Hillhouse, The University, Birmingham.

Names of Flowers and Fruits.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for other matters. Correspondents should never send more than six plants or fruits at one time; they should be very careful to label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *J. M. F.* Round Winter Nonsuch.—*Carnarvon.* 1, Harvey's Wiltshire Defiance; 2, Lemon Pippin; 3, Newton Wonder.—*T. A. F.* 1, Striped Beefing; 2 & 3, Dumelow's Seedling (Wellington); 4, Dean's Codlin; 5, Lady Sudeley.—*A. Robinson.* The Pear had decayed.—*W. H. H.* Round Winter Nonsuch.—*W. B. M.* Prince Albert.—*Penhurst.* Pear Joséphine de Malines, Apple Gravenstein.—*T. H. B.* 1, Hambledon deux Ans; 2, Annie Elizabeth; 3, Ribston Pippin; 4, Not recognised; 5, Cornish Aromatic; 6, Beurré Clairgeau.—*W. T. F.* The flat fruit is Stirling Castle, and the other with the flushed cheek Mabbott's Pearmain.—*Surbiton, Surrey.* 1, Mère de Ménage; 2, Dumelow's Seedling (Wellington); 3, Small's Admirable; 4, The fruit had decayed; 5, Cox's Orange Pippin; 6, King of the Pippins.

Names of Plants: *G. H.* 1, Mesembryanthemum cordifolium, variegated variety; 2 and 3, Alternantheras, bedding varieties; 4, Sedum carneum; 5, not recognised; 6, Iresine Lindeni.—*J. C.* Centranthus ruber.—*R. D., Dublin.* Sempervivum tortuosum variegatum. A native of the Canary Isles.—*V. F. P.* Alisma Plantago.—*E. Y.* Hibiscus syriacus, double purple variety.—*C. B.* Solanum jasminoides and Ginkgo biloba, formerly called Salisburia adiantifolia; a Coniferous tree commonly known as the Maidenhair tree.—*Vitis.* 1, Zygopetalum crinitum; 2, Bifrenaria Harrisoniæ; 3, Sarcochilus unguiculatus; 4, Octomeria diaphana.—*J. C.* 1, Acæna microphylla, sometimes called A. Novæ Zealandiæ in gardens; 2, Linaria Cymbalaria (Toadflax).—*J. P.* Cypripedium Rothschildianum. The flowers you describe, and also the Cattleya, are equal in size to the largest we have on record.—*C. E. F.* Xylobium species probably. We will reply more definitely later. The Cypripedium leaves are infested with the small thrips, which often attack them when grown too hot. Cut off the worst leaves and spray the plants occasionally with a safe insecticide.—*R. M. L.* 1, Exacum affine; 2, Juglans nigra.—*C. B. S.* The flowers are those of Achillea ptarmica flore pleno, a well-known hardy perennial plant. These are, however, pure white in their natural condition, and the specimens you have sent have been made to appear purple by treatment with an aniline dye.—*X. Y. Z.* 1, Selaginella uncinata, more often called C. cæsia in gardens; 2, probably Adhatoda cydoniæfolia; 3, Æchmea fulgens; 4, Cyperus alternifolius; 5, Colchicum autumnale.—*Durham.* 1, Cestrum aurantiacum; 2, Polygala Dalmaisiana; 3, Apple next week.—*J. J. F.* Kölreuteria paniculata.—*Stellata.* Cratægus Pyracantha var. Lelandi.—*J. H. B.* 1, Hoya carnosa; 2, Statice latifolia; 3, Corylus colurna; 4, Taxodium distichum.—*L. C.* 1, Kolreuteria paniculata; 2, Ampelopsis next week; 3, Berberis next week; 4, Berberis sp. next week; 5, Rhus Cotinus; 6, Pulmonaria officinalis.

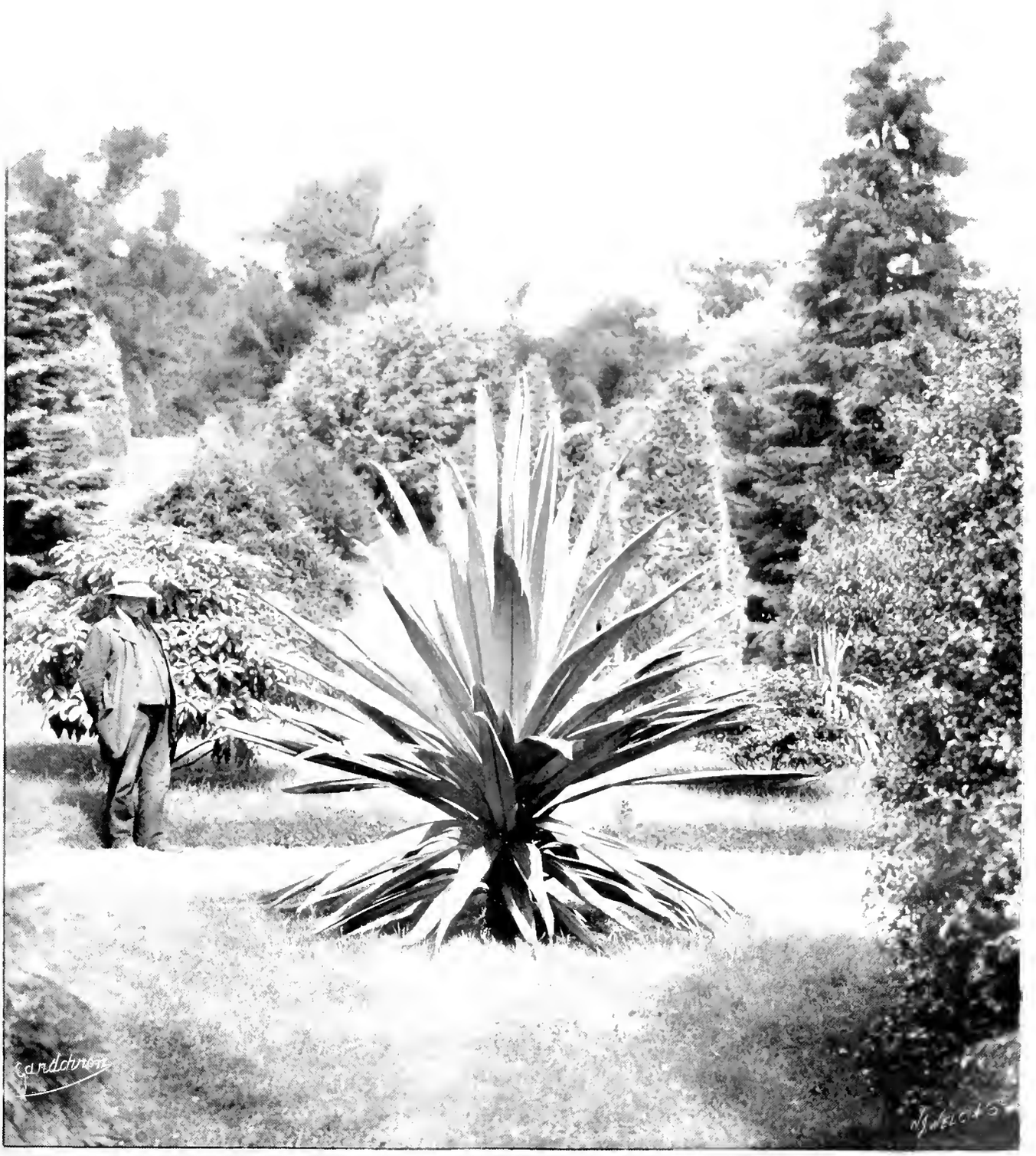
Nectarine Roots: *A. G.* The roots are attacked by fungus which has undoubtedly started from old decaying roots in the soil. After getting out every bit of old root that can be found, quicklime should be mixed with the soil before other trees are planted. The Plum trees you suggest would probably succeed better in the position than Nectarines.

Pruning: *Old Subscriber.* What you say is perfectly right when regarded as a general statement. At the same time, it may be conceded that in many gardens pruning is overdone to the detriment of the trees and limitation of crop. The matter is greatly affected by the local conditions of soil and climate, the varieties of fruit cultivated, and by the kind of stocks they are worked upon.

Sycamore Tree with Ivy: *Very Old Subscriber.* The relationship is not mutual. The Sycamore supports the Ivy and obtains nothing in return, but on the contrary the effect of the Ivy upon the tree is harmful. Like the indulgence of many other dangerous practices that of allowing the Ivy to grow on the Sycamore tree may not be followed with disastrous results for many years to come, but the danger to the well-being and even the life of the tree will be just in the same proportion as the growth of the Ivy. It is a question for the owner to decide whether, for the picturesque effect in winter, he is prepared to risk the health of the host plant. If he decides to consider the Sycamore tree first, then we do not hesitate in advising him to remove every vestige of Ivy.

Weights at the Covent Garden Market: *T. M., Shrewsbury.* The following fruits and vegetables, if consigned for sale at the Covent Garden Market, should weigh (nett) as undermentioned. *Half-Sieves:* Gooseberries, 28 lbs.; Cherries, 24 lbs.; Currants, 24 lbs.; Plums, 28 lbs.; Damsons, 28 lbs.; Mushrooms, 12 lbs.; Brussels Sprouts, 20 lbs. *Bushels:* Apples, 46 lbs. to 50 lbs.; Walnuts, 48 lbs.; Pears, 56 lbs.; Scarlet Beans, 40 lbs.

Communications Received.—W. Goff—Director of Education, Preston—W. E. B., Grenada—B. C. R.—Old Subscriber, Devonshire—C. H. P.—T. A. F. (one shilling for Royal Gardeners' Orphan Fund).—F. C. G.—T. L., Senior—E. M. Bear—A. J. H.—J. R.—Alex. H.—S. A. A.—M. S.—C. G. L.—A. L.—D. F.—L. D.—H. S. H.—T. B.—H. W. W.—B. C. R.—T. B.—J. J. W.—S. Craggs—D. T., Sussex—H. B.—W. E.—G. H.—W. C. M.—W. K.—E. H. W.—W. W.—A. O.—G. B. M.—Mum—D. H., Fife—J. M., Plympton—R. C. T.—F. R.—J. T. S.—T. W. C.—W. H.—Oxton—F. F.—A. B.—G. D.—W. H.—R. R.—A. S.—A. C., Haverland—W. O.—Durham—J. R. B.—C. F. T.—F. M. B.—G. A. C.—W. F. C.—H. A.—C. R.—D. R. W.—J. T.—D. R.—W. T. G.



CORDYLINE INDIVISA VERA, GROWN FROM SEED, IN THE GARDENS AT CASTLEWELLAN.
FROM A PHOTOGRAPH KINDLY SENT BY THE EARL OF ANNESLEY.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle

No. 1,033.—SATURDAY, October 13, 1906.

CONTENTS.

ILLUSTRATIONS.

LEONARDSLEE.

IN the neighbourhood of Horsham may be found some of the prettiest lanes in the county of Sussex, and the drive from the town towards Leonardslee affords an illustration of the fact, for it passes through country scenes of the most picturesque description. The estate of Leonardslee is the property of Sir Edmund G. Loder, Bart., and we may say at once that it is one of the most interesting it has been our good fortune to visit. There are presented most, if not all, the characteristics that are essential to making a country residence attractive. The locality is one in which the comparatively mild weather conditions and the pure atmosphere enable one to cultivate out of doors a very large number of plants that in less favoured districts would need the shelter of the glasshouse; the estate is extensive, and the pleasure grounds are of such an undulating character that they lend themselves naturally to the gardener to be moulded into the most charming effects it is possible to conceive. Anyone who has stood in midsummer at a point near to the residence, where a view can be obtained over the pond which lies in a hollow amidst the delightful banks of Rhododendrons and other flowering and foliage plants, and has seen the effect of the plants grouped on the opposite bank which slopes towards the house, or who has enjoyed the privilege of seeing the reverse of this picture, which is equally satisfying, must share our opinion that these grounds offered such natural advantages as the landscape gardener but rarely finds available for the practice of his art.

But there has been another factor at Leonardslee which has had the greatest influence upon the gardens. In Sir Edmund Loder the estate has an owner who possesses zeal for everything concerned with its betterment, and, as he is an enthusiastic gardener, he has brought to his work such knowledge and experience as few proprietors of similar establishments could command. In scientific circles Sir Edmund is well known as a zealous naturalist, and his name is as familiar among members of the Zoological Society as it is to horticulturists. It is to this fact that Leonardslee owes something of the interest it possesses for the average visitor. The park itself contains kangaroos, gazelles, prairie dogs, and mountain sheep, all naturalised under conditions in which they remain during summer and winter. Near the water there are badgers and beavers, possessed of considerable liberty, yet confined to certain areas. These animals have been brought from their native habitats at a great expense, and their successful acclimatisation can only have been effected after repeated trials, during which experience of their requirements has been gradually but certainly acquired. A museum containing an extensive collection of natural history specimens would interest for a long time those who make a study of animals, birds, insects, or reptiles, and some of the most remarkable of these specimens are animals that have been shot by Sir Edmund himself and his friends during their hunts abroad after "big game."

But for ourselves and readers of this journal Sir Edmund's efforts in the direction of the acclimatisation of plants have even greater interest than the kangaroo. The number of tender and half-tender species of plants now successfully cultivated in these gardens is quite extraordinary, and, in order to make a study of them, or obtain an accurate estimate of them, even, it would be necessary to spend a season, at least, in the locality, for, as the flowering period changes, fresh species continually come into bloom and are conspicuous, which previously would be likely to escape notice. The first feature that attracted our attention during a visit in June last was the Palm Walk, a winding path leading away from the residence on the west side, and which is flanked by borders planted with the choicest of flowering shrubs very plentifully interspersed with Bamboos, and excellent, tall specimens of the hardy Palms Chamærops humilis and C. Fortunei. The reader may form some idea of the unusually exotic appearance of these gardens from the statement that there are 400 of these Palms, many of them being large plants that have a considerable effect on the scenery from every point. On the sides of the path we have mentioned some of the more remarkable plants were Eucryphia pinnatifolia, big specimens of Fatsia (Aralia) japonica, high and spreading bushes of Camellia, also Stuartia japonica, that effective green-leaved Holly (Ilex latifolium), several species of Deutzia, great bushes of Choisya ternata, Photinia serrulata, Phormium tenax (which blooms well here), and Halesia tetraptera (the Snowdrop tree) in flower. In addition to these and many other plants such as Ericas, of which E. arborea is an excellent specimen, are numbers of choice Rhododendrons, chiefly Himalayan species and hybrids, which, indeed, form one of the grandest features of the gardens throughout.

The conservatory is joined to the residence on the south-west side, and on the lawn in front of this is a magnificent Tulip tree (Liriodendron tulipiferum, about 100 feet in height, but turning to the south-east front there is an infinite number of plants of the greatest interest, both near to the residence itself and in the grounds extending from the building. On the walls of the buildings are fine plants of the Pomegranate (Punica Granatum), which has borne fruits; Romneya Coulteri, 14 feet in height, bearing many flower buds when we saw it; Fremontia californica, quite 20 feet in height, and bearing a good display of its richly-coloured, yellow flowers; Carpenteria californica, a plant introduced in 1880, and exceedingly popular for its pure white, saucer-shaped flowers, wherever it can be induced to thrive; Bignonia grandiflora in flower, and Banksian Roses (very high). Other rare plants, either on or near to a wall which extends in a line from the south-east front, included the Loquat (Eriobotrya japonica), Azara microphylla, Camellia Donck elarii, Pernettya mucronata, a small plant of Quercus nigra, an excellent bush of Lyon odendron, Gaultheria Shallon, Trachelospermum (Rhyncosphermum) jasminoides, Pittosporum Tobira variegatum, Vitis Coignetiæ, Exochorda grandiflora, Olearia stellata, the very beautiful Rosa sinica, Eucalyptus unigera 25 feet in height, E. arborea, Phlesia buxifolia bearing several of its Lapageria-like flowers and Umbellularia (Orcodaphne) californica, a half-hardy tree remarkable for the strong odour of camphor it emits. We have already spoken of the glorious view obtainable from the south-east front. Standing on the terrace, with the back to the residence, there is a fine Cedar to the right-hand, and on the quickly-sloping lawn are a few flower beds, but beyond are other beds and groups of Rhododendrons, Kalmias, and many other similar plants. At the bottom of the valley is the winding lake or pool, and beyond this the ground rises again quickly, thus providing a slope facing to the terrace, which has been planted with a selection of flowering plants, the varieties of which are massed together to yield a brilliant display that is well within the view from the house windows and from the terrace. There are also some of the more brilliant leaved species to be seen here that particularly in autumn are very effective when seen from a distance or at closer quarters. The art of the gardener has been to furnish attractive pictures in whichever direction the eye may look, and these floral pictures find most appropriate relief in the densely-wooded land in the distance.

The Alpine Garden.

By proceeding round to the west side, and through the "evergreen" walk, the large rock-garden, north-west of the residence, is reached, and in this again Leonardslee possesses a feature that is rarely excelled in private estates.

It is very extensive, portions of the structure are of considerable height, and it has been so designed that there appear to be appropriate places for little and big plants, and suitable "habitats" for the most variable species in the Alpine flora. The general effect, as we saw it in June, was extremely satisfactory, and the pleasure was none the less when particular attention was directed to individual varieties of plants, for most of them were growing with unusual freedom, and there were few that were not more or less in flower. The one plant that impressed us most at the time was Olearia Gunniana. The effect produced by this species when flowering as it does at Leonardslee cannot be over described. Specimens 4 feet in height and upwards, growing on the summit and in suitable positions near the top of the rockery presented a cloud of snow-whiteness; not a leaf was visible, and the effect was perfect. It is surely the best species of a very good garden-genus. Upon entering, however, we were immediately impressed with the beauty of a splendid collection of Saxifragas in flower, which included such species as S. aizoides, S. aizoon and many of its varieties, S. arctioides, S. Burseriana, S. Cotyledon with its variety pyramidalis, S. Macnabiana and S. mutata. There were several very fine plants of the beautiful S. longifolia in flower, including the specimen figured in the *Gardeners' Chronicle* on March 10, 1906; this had an inflorescence about 18 inches in length and 10 inches in diameter. But it is a pity that plants of this incomparable species flower but once, and then die. The blue Alpine Starwort, Aster alpinus, with its varieties albus and speciosus, together with the charming little evergreen Alpine plant usually known by the name of Hutchinsia alpina (Noccea alpina), and Hutchinsia petræa, had a very pretty effect. Between the crevices of the rock was a good collection of Ramondias looking their best. R. pyrenaica with its white variety, and Haberlea rhodopensis blooming profusely. On the higher parts of the rockery were noticeable big clumps of Helianthemums, Dianthus, and Mesembryanthemums, all in full flower; Oncocyclus iridoides, with its masses of golden colour, together with O. alboroseum, also looked well. In the dump part of the garden, shaded to some extent by the huge rocks, were groups of Primulas, some of those in flower including P. farinosa, P. sikkimensis, and the new P. Veitchii. In this part of the rockery are also to be found Cypripedium Calceolus, C. acaule, and C. spectabile, large clumps of the latter species being very strong. There were beds of Sarracenia and Darlingtonia in flower, and the little Sundews, and Pinguiculas, with their pretty blue flowers, between them. Further on were huge clumps of Lithospermum prostratum, L. Gastoni, and the distinct L. graminifolium. Among other plants in flower may be mentioned Potentilla tridentata, P. nitida, and its variety atrosanguinea, Saponaria ocymoides splendens, and the variety alba. The pretty little Androsace lanuginosa, and A. sarmentosa, with Leontopodium alpinum and its Himalayan variety, Arnica montana, Aspernla nitida, several different species of Campanula, and Erigeron aurantiacum were all exceedingly attractive. Among the choice flowering rock shrubs, in addition to the Olearia already mentioned, particular notice may be made of the good specimens of Fabiana imbricata, Kalmia rosea, Ononis rotundifolia, Azalea pontica, Veronica Decori, Vaccinium Martinetii, and the lovely Rhododendron ferrugineum and R. f. album, R. hirsutum, and R. h. album. Potentilla grandiflora, Lupinus arboreus, and Convolvulus Cneorum must conclude our enumeration of a few of the most effective plants in the alpine garden at that date.

(To be continued.)

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM FLETCHERIANUM.

This handsome hybrid Cypripedium, the result of a cross between C. Godefroyæ leucochilum and C. Lord Derby, was awarded a first Diploma and an Award of Merit at the meeting of the Royal Horticultural Society on September 25, when exhibited by Messrs. Hugh Low and Co. These distinctions were well merited, for it is an excellent flower in all respects and comparable with the fine C. Daisy Barclay for which J. Gurney Fowler, Esq., secured a First Class Certificate, on July 1, 1905. The inflorescence carried two fine flowers, the ground colour being creamy yellow, and this is heavily blotched with dark chocolate-purple coloured markings, the lip being of pale yellow with a slight freckling of purple on the face.

ODONTOGLOSSUM SCEPTRUM.

A fine flower of this handsome species, which was originally described by the late Professor Reichenbach under the above name, is sent by F. W. Moore, Esq., from the Royal Botanic Gardens, Glasnevin, Dublin. Later, Professor Reichenbach included it under O. luteo-purpureum as the variety Sceptrum. Still later, in *Gardeners' Chronicle*, April 22, 1882, p. 525, on receiving flowers which bloomed out of the first importation by Messrs. Sander and Sons, he returned to the original specific name beginning the note in the *Gardeners' Chronicle*: "When degrading this fine thing to a variety of luteo-purpureum, I may have been guided by some hybrids between the two varieties or species. At all events, it well deserves to rank as a distinct garden form." Odontoglossum specialists and hybridisers are now agreed that it is better to return to the name originally given to this distinct plant, which is easily distinguished from the typical O. luteo-purpureum by the broader petals, which are handsomely spotted with red-brown on the inner halves, and the broader much crimped and fringed lip. The Glasnevin flower has a primrose-yellow ground colour, the sepals being nearly covered by large chestnut-brown blotches and the petals having the tips pale yellow, the inner halves being spotted with reddish brown. The lip is 1 inch

withheld until it only receives enough to keep the pseudo-bulbs from shrivelling. The leaves should be sponged and kept perfectly clean, as they are liable to attacks of red spider and thrips. It is propagated by division of old plants. *George Adlam.*

Fig. 103.—Cypripedium Fletcherianum.

STANHOPEA OCULATA.

This beautiful Orchid is not grown so much as it deserves to be. I believe this is due to the flowers (which are large and fragrant) lasting but a very short time. Owing to the peculiar manner in which the flowers are produced, it requires to be grown in a basket, the bottom and sides of which are made as open as possible, and suspended from the roof of a house, with the temperature of 70° to 75° Fahr. by day and 65° to 70° by night in summer, and 60° to 65° by day and 55° to 60° by night in winter. It does well in a compost of two-thirds sphagnum, one-third turfy peat, with a little charcoal. During its growing period a good supply of water should be given. Immersion of the plant in water of the same temperature as that of the house for a few minutes about once a week will prove beneficial. As the plant approaches its resting period (from November till February) water should gradually be

and a quarter broad, and has some small, brown blotches on each side of the crest; also a large one in front.

O. facetum Rchb. f. is generally represented by small forms of O. sceptrum in gardens, and probably the type was a similar form.

ODONTOGLOSSUM CRISPUM.

A very fine type of this favourite species is in flower in the Orchid nurseries of Mr. H. A. Tracy, Amyand Park Road, Twickenham. The plants have been freshly imported, and the flower spikes are produced from the imported pseudobulbs. The form of the finely-rounded, broad-petalled flowers is remarkable, and all are characterised by very large and broad labellums, several of which are handsomely blotched. Two specially fine flowers have blotched sepals and petals, and one has pure white flowers with no other colour than the yellow crest. It has been thought that the locality from which the best round-flowered O. crispum came had been almost worked out, so that it is satisfactory to see again a large batch of the best forms. *J.O'B.*

SEED-PACKING FOR THE TROPICS.

As referring to the question of seed-packing discussed some time ago in the pages of the *Gardeners' Chronicle*, the following communication from Mr. Sands, of the Agricultural Department, St. Vincent, West Indies, may be of interest:—

Dear Mr. Watson,—With reference to the collection of vegetable seeds received from you last year for trial in this island, I now beg to enclose a report of the result by Mr. Patterson, Resident Master, Agricultural School, St. Vincent. The plan he adopted in testing the seeds was somewhat more comprehensive than that carried out elsewhere at the same time, the results of which were published a few months ago in the *Gardeners' Chronicle*. In most cases three trials were made—one on receipt, two at the end of a month, three at the end of two months, and in the case of the Beans and Peas, there was a further trial three months after receipt. The seeds germinated well in the first two trials, and a number gave a fairly good germination in the third trial. In the case of the Beans and Peas the larger proportion grew well after being kept for three months.

I would not venture to keep seeds of any description more than three months after arrival, unless they were packed so that they would not be affected by local conditions; but the fact that you wish to demonstrate, as I understand it, is, that seeds may be sent to the tropics with safety in paper packets. These experiments clearly prove that you are right, and further that even after the seeds have been kept two or three months they germinate well.

The practice adopted here and in some other islands is to order fresh supplies of seed every three or four months according to requirements, and good results are usually obtained if the seed comes from a trustworthy firm. I have never yet obtained seed in specially sealed packets, but hope to try some shortly and will note results. *W. N. Sands, Agricultural Superintendent, St. Vincent, W.I.*

"From time to time a controversy has arisen as to whether seeds of English vegetables should be transmitted in ordinary paper packages, or in hermetically sealed tins. During the year a box of seeds packed in ordinary paper packets was received from the Royal Gardens, Kew, in order that the seeds might be tested as to their germinating powers. The results are given below. From personal observation I do not consider that it is so much a question of temperature and moisture as a question of ravages of small ants and weevils after arrival in the tropics. It would be advisable if this experiment could be carried farther, and seeds tested weekly, some being exposed to atmospheric moisture and insects, some being kept as a control, under more rigid conditions.

Name.	1st trial. Per cent.	2nd trial. Per cent.	3rd trial. Per cent.	4th trial. Per cent.
Bean, Broad Windsor	48	92	72	76
,, Early Long Pod	96	100	84	100
,, Dwarf Canadian Wonder	100	98	100	96
,, Runner, Giant White	80	72	72	24
Pea, Ne Plus Ultra	100	98	90	82
,, Ringleader	100	94	80	92
,, Fillbasket	96	100	94	80
,, Satisfaction	100	96	84	94
Cress, Curled	90	—	—	—
,, Plum	97	100	—	—
Mustard, White	80	100	94	—
Cabbage, Early Market	75	66	46	—
,, Main Crop	78	70	54	—
,, Dwarf Green Savoy	78	76	52	—
,, Cottager's Kale	91	98	78	—
Brussels Sprouts	94	98	78	—
Cauliflower, Universal	99	94	76	—
Broccoli, Purple Sprouting	62	58	46	—
,, Favourite	97	100	92	—
Radish, Turnip	82	82	78	—
,, Olive	79	66	56	—
,, Long	81	84	64	—
Turnip, All the year round	98	100	84	—
,, Early Six-Week	93	92	88	—
Leek, Musselburgh	32	14	—	—
Onion, Giant	10	—	—	—
,, Imperial Reading	—	72	30	—
Carrot, Altringham	—	64	46	—
,, James Scarlet	—	78	56	—
Parsnip, Student	—	2	—	—
Celery, Sulham Surprise	56	78	16	—
Parsley, Imperial Curled	89	92	70	—
Lettuce, Standwell	94	84	14	—
,, Paris White Cos	23	74	22	—
Endive, Green Curled	62	70	58	—
Cucumber, Prolific Ridge	100	—	100	—
,, Chuter	100	—	100	—
Vegetable Marrow	40	—	100	—
Spinach, Prickly	61	28	66	—
,, Round	69	32	58	—
Beet, Dwarf Red	84	76	100	—
Tomato, Early Market	—	24	44	—
Marjoram, Sweet Knotted	67	34	20	—

—*W. H. Patterson, St. Vincent.*

LIFTING PEACH TREES.

Unfruitful trees can often be made fruitful by lifting and replanting, and few subjects respond better to these operations than the Peach. I have known strong-growing Peach trees of great size fail year after year to produce satisfactory crops, but after they have been taken up and root-pruned they have commenced to fruit freely. In such unfruitful trees exist, I strongly advise this work to be taken in hand at once, whether the trees are under glass, or trained outside on the open walls. Make preparations for the work by having a supply of fresh soil in readiness, and then dig a trench at several feet distance away from the stem and well down to the drainage material. When taking out the soil be careful to preserve intact as many of the roots as is possible. Get well beneath the root system with the fork and raise the roots nearer to the surface of the ground level. This operation should not be hurried, but should be carried out with care and skill, for it sometimes happens that one or two deep-plunging roots are left unsevered, and these are often the means of rendering the work futile. If the trees are growing in the Peach house, the border in which they are planted should receive a gentle watering, more or less, according to the state of dampness in which the soil was found to be. Keep the trees shaded during bright sunshine, and syringe them overhead two and three times daily until they have somewhat recovered from the disturbance, after which they may be gradually allowed more sunshine. Plum trees and others bearing stone fruits may be treated exactly as described above, and with excellent results. I know of no better compost for the Peach than a sweet, rather sandy loam, with some old brick mortar, burnt earth, and a little well-decayed manure, and, if the soil is of rather poor quality, a sprinkling of half-inch bones will be an advantage. The new soil should be made somewhat firm, in order that the roots may readily lay hold of it. The following list contains an excellent selection:—Dymond (one of the best), Stirling Castle, Violette Hative, Bellegarde, Crimson Galand, Barrington, the Nectarine Peach, and Royal George. Among the best early varieties is Hale's Early, and this is followed by Sea Eagle, Walburton's Admirable, and Princess of Wales. The pale-skinned kinds, no matter how excellent they may be when ripe, are unsuitable for market purposes. They will not travel long distances in good condition unless they are gathered and packed unripe, for they readily bruise and show every finger mark. *H. Markham, Wrotham Park, Barnet.*

TREES AND SHRUBS.

THE HARDY HEATHS.

Probably no class of hardy plants is more popular with those who know them well than are those known collectively as the hardy heaths, and represented by the genera Erica, Calluna, and Dabeocia. To those who are not well acquainted with the plants, they may be recommended for any soil that does not contain lime, though one species, Erica carnea, will grow if there is not very much lime present, and I have found it succeed better when a little mortar-rubble is mixed with the soil than when it is planted in ground entirely deficient of lime. Sandy peat is the best soil for Heaths, but heavy soils can soon be brought into suitable condition for them by the admixture of peat or leaf-mould and a proportion of sand. The hardy Heaths vary in height from 6 inches to 6 feet, but occasionally some of the tall-growing species have been known to attain to 20 feet in height. A height of from 6 feet to 8 feet, however, is more general in this country. The plants should be planted singly or in clumps of three at about a yard apart, but the dwarfer-growing species should be put in clumps of ten or a dozen, or they can be used as a groundwork for the taller ones if planted in beds.

It is possible to have Heaths in flower nearly all the year round by making a proper selection of the species and varieties. From about the middle of October to, perhaps, the middle of December there are no Heaths in flower, but during the remainder of the year they are more or less in bloom. During frosty weather Erica carnea and E. mediterranea hybrida may be in bloom, but the frost does not affect the flowers to any appreciable extent, and they bloom away freely again with the advent of milder weather.

Propagation is effected by division (where possible), by seeds, by cuttings, and by layering. The last-mentioned method is the best, as from layers the young plants are large enough to handle, and are ready to take off in about 18 months from the time of putting them down. Where only a few plants are required some of the shoots can be layered and a stock obtained without in any way spoiling the old plant. Division is effected by pulling the old clumps to pieces in early spring, when practically every bit that has a few roots attached will grow. This method of propagation can only be used with the dwarf-growing Heaths, which spread laterally and make roots wherever the stems touch the ground.

Seeds should be gathered as soon as ripe, and, after being cleaned, they should be put away in a dry place until required for sowing, which should be done in March in gentle bottom heat, and they soon germinate. Cuttings can be taken during August and September and put in pots of sandy soil in a cold frame until the following spring, when they will have formed a callus, and can then be put in a moderately warm atmosphere to induce root action. Care must be taken to prevent the cuttings from damping off during the winter, giving air on every possible occasion, and remembering that a little frost does not harm them half so much as a damp, stagnant atmosphere.

Erica.

E. arborea is a native of the Mediterranean region, and in favoured localities of the south

and west of this country has been known to attain to 20 feet and more in height. It is not very hardy, and would probably not grow satisfactorily north of the Thames, though it is such a handsome plant that it is well worth a trial. The individual flowers are small, globular, and nearly white, but are produced so freely as to compensate for their lack of size. The leaves are short, soft to the touch, and are produced in whorls of three. The young wood is dark brown and hairy. The wood of this species is used in the production of the so-called Briar pipes, a corruption of the French Bruyere, though it is doubtful if E. arborea has much to do with the ordinary sixpenny Briar pipe found in gardens.

E. AUSTRALIS.—It is a pity that our gardening friends in Cornwall, Devon, and such-like favoured localities should have a monopoly of this Heath, but, unfortunately, it is somewhat tender, and can be grown only in warm, sheltered districts. When in bloom in April and May it strongly suggests some of the Cape Heaths, with its terminal clusters of bright, rosy-red flowers, each about a quarter of an inch long, and sweet scented. It is a native of Spain and Portugal.

E. CARNEA.—If only one Heath were to be grown in the garden this is the one which ought to be selected, as it is thoroughly hardy and wonderfully free blooming. The flowers open at a time when they are most valued, from January onwards, and are of a bright red colour, which forms a welcome change to the yellow or white of our early flowers. It only grows about 6 inches or so in height, forming a dense, tufted mass entirely covered with flowers. It is a native of the mountains of Europe. There is a variety of this with white flowers (E. carnea, var. alba).

E. CILIARIS (the Dorset Heath).—This is a native of south-western Europe, but is also found in Dorset and Cornwall, and in some parts of Ireland. It makes a round, spreading plant about a foot in height, with slender, semi-prostrate branches, on which the erect flower stems are borne in racemes. The flowers are of a rich purple-red colour, opening in July and continuing till autumn. The leaves are produced in threes, and, together with the younger wood, are clothed with fine hairs.

E. CINEREA (Scotch Heather).—This is one of our most common native Heaths, and is found abundantly on mountains and moors from Scotland to Cornwall. In this district it is found all over the moors in conjunction with E. Tetralix and the Ling (Calluna vulgaris). It grows about a foot to 18 inches in height, and from June to September is covered with terminal clusters of reddish-purple flowers. There are several varieties, of which alba (the white Scotch Heather), atropurpurea (deep purple), and atrosanguinea (crimson) are perhaps the best. Alba minor, coccinea, purpurea, and rosea are sufficiently described by their names, and are well worthy of cultivation.

E. LUSITANICA (E. codonodes).—This is a tall-growing plant, obtaining a height of from 6 feet to 10 feet, and somewhat resembles E. arborea in general appearance, but differs in the longer and less globular flowers and paler and more feathery foliage. The flowers are white, faintly tinged with pink, and are borne in great profusion during April and May. It is a native of Spain and Portugal, and is rather more tender than E. arborea.

E. MACKAII.—This is a native of Spain and Galway (Ireland), and is a dwarf-growing plant less than a foot in height. It is very like E. Tetralix in general appearance, but the flowers are of a paler shade of rose and more globular in shape.

E. MAWEANA was discovered in Portugal by Mr. G. Maw about 40 years ago, but is still by no means a common plant. It is very closely allied to E. ciliaris, of which it is probably a variety. It has a short, sturdy growth, and bears rich crimson flowers in comparatively large racemes.

E. MEDITERRANEA is a native of south-west France and Spain, and is a tall-growing species, reaching a height of 6 feet or more with age. It is the hardiest of the taller Heaths, and is very effective when planted in large clumps. The flowers are of a bright rosy red, but have a purplish look in the mass, and are freely produced from the middle of March to May. It makes a good evergreen when not in flower, as the foliage is of a soft, plumose character, and of a pleasing green hue. There are three varieties of this, viz., alba, glauca (with bluish foliage and rosy-red flowers), and hibernica (a native of Ireland), and an upright-growing plant 3 feet or 4 feet in height

FIG. 104.—CORYLUS COLURNA AS SEEN AT KEW IN WINTER.

E. MEDITERRANEA HYBRIDA is a hybrid between E. mediterranea and E. carnea, and grows about 18 inches in height, with pale, rosy-purple flowers opening from January onwards, though a few flowers can sometimes be seen as early as November. It is a free-blooming and thoroughly hardy Heath, and is deservedly popular.

E. MULTIFLORA.—This is usually met with under the name of E. vagans alba, but it is a true species from southern Europe, and has nothing to do with the Cornish Heath, though it has a strong resemblance to it. It differs chiefly in the shorter and more compact growth and the shorter and fuller racemes of flower. The latter are nearly white, and are borne profusely from July to October.

E. SCOPARIA.—This plant is only useful as an evergreen, as its greenish-white flowers are very small and insignificant, though very freely produced. It is a tall grower, reaching a height of 8 feet or more, and quite hardy. It is a native of the Mediterranean region, and is found chiefly on the mountains.

E. STRICTA is a native of south Europe, and is a plant reaching a height of 5 feet or 6 feet, with terminal clusters of pale purplish-pink flowers borne in profusion from the end of June onwards. The stems are erect, and are clothed with deep green plumose foliage. It is thoroughly hardy, and can be recommended for cold districts.

E. TETRALIX (cross-leaved Heath).—This is found practically everywhere where Heaths will grow. It makes a plant a foot or rather more in height, with downy leaves arranged in whorls of four. The flowers are of a bright shade of rose, and are borne in erect, terminal clusters from July to September. There is a white form, another with very pubescent foliage, known as alba mollis, and rubra has red flowers

E. VAGANS (Cornish Heath).—This is one of the best of the Heaths when in bloom, and is also a useful dwarf evergreen when not in flower. It grows from 1 foot to 2 feet in height, and bears racemes of rosy-purple flowers from July to October. It is a very easy species to grow and is thoroughly hardy. It is a native of south-western Europe, but is also found in Cornwall and some parts of Ireland. The variety grandiflora has rather larger flowers than the type, and rubra has red flowers and a straggling habit.

E. WATSONI was discovered growing wild in Cornwall by Mr. H. C. Watson, and is generally held to be a hybrid between E. Tetralix and E. ciliaris. It bears pale crimson flowers, and in every way is intermediate between the two species above mentioned.

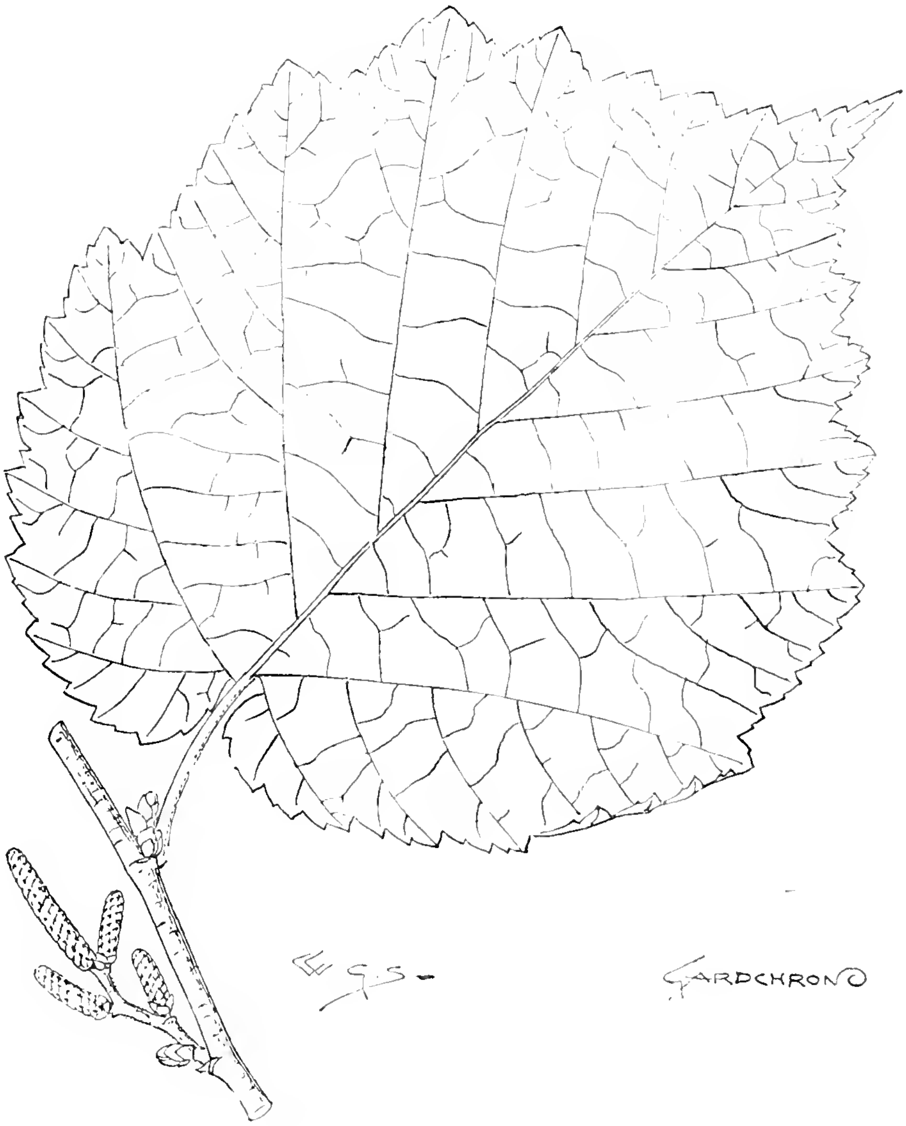


Fig. 105.—Corylus colurna: leaf and male catkins.

E. Veitchiana (E. arborea × E. lusitanica) was raised in Messrs. R. Veitch & Son's nursery at Exeter, and is intermediate between the two parents. It is very floriferous, but, unfortunately, inherits the tenderness of its parents.

Calluna.

C. vulgaris (Erica vulgaris) (The Ling).—This is a common plant on mountain and moor throughout the British Isles and the greater part of Europe, and though in itself it is not a particularly handsome plant, yet it has given rise to many fine varieties. The type has small flowers of a pale purple tint, produced in racemes from August onwards, but which are very effective when seen in masses on the moors. The varieties are some 20 or more in number, and a good selection is comprised by alba minor, alba rigida, and alba pumila (dwarf-growing, white-flowered); alba pilosa, and Hammondi (taller-growing whites); Alporti (crimson); tenuis (red); aurea (with bright golden foliage); flore pleno (with double purple flowers); and minima, hypnoides, and pygmaea (dwarf growers, with purple flowers).

Daboecia.

D. (Menziesia) polifolia (the Irish Heath).—This is a native of the west of Ireland, south-west Europe, and the Azores, and is a handsome little shrub growing about a foot in height, with terminal spikes of comparatively large bell-shaped flowers borne in great abundance from June to October. There are three varieties of this, viz., alba (with pure white flowers), bicolor (in which the flowers are variously purple or white), and atropurpurea (with deep purple flowers). The white form has of late years deservedly become popular. *J. C., Bagshot.*

CORYLUS COLURNA.

The Constantinople nut is more ornamental than useful. It forms a tree up to 60 feet in height with a stout trunk, branches more or less horizontal, heart shaped, glossy green leaves 5 inches by 4 inches, and small, hard-shelled nuts enclosed in fleshy, hairy-green involucres (see fig. 106, prepared from the Kew plant). It grows freely, and has a robust appearance in the gardens of this country, where it has held a place here and there since 1665, when, according to Loudon, it was cultivated by a Mr. Rea, florist, who had "many goodly plants of the filbeard of Constantinople." Although a vigorous grower with us and usually very free in the production of flowers, both male and female, it is a shy fruiter. The Kew tree, represented at fig. 104, as it appeared when covered with catkins in February this year, had scarcely a score of fruits upon it in October, although the tree is in the best of health and moderately old, the trunk measuring 4 feet 10 inches in girth at 2 feet from the ground. This tree stands on the site of the original botanic garden of nine acres, then enclosed by walls, with the Temple of the Sun in the centre, which was laid out by John Haverfield and William Aiton, who had been recommended by Philip Miller of the Apothecaries Garden, Chelsea, to take charge of the new botanic garden at Kew. This was in 1759. Now Kew consists of some 300 acres, and the Apothecaries Garden, shorn of some of its importance, but still doing good, is under the capable superintendence of a young gardener who was trained at Kew. It is possible that the Constantinople nut is one of the few trees that remain of those presented to Kew in 1762 by the Duke of Argyll from his then famous garden at Whitton, near Hounslow.

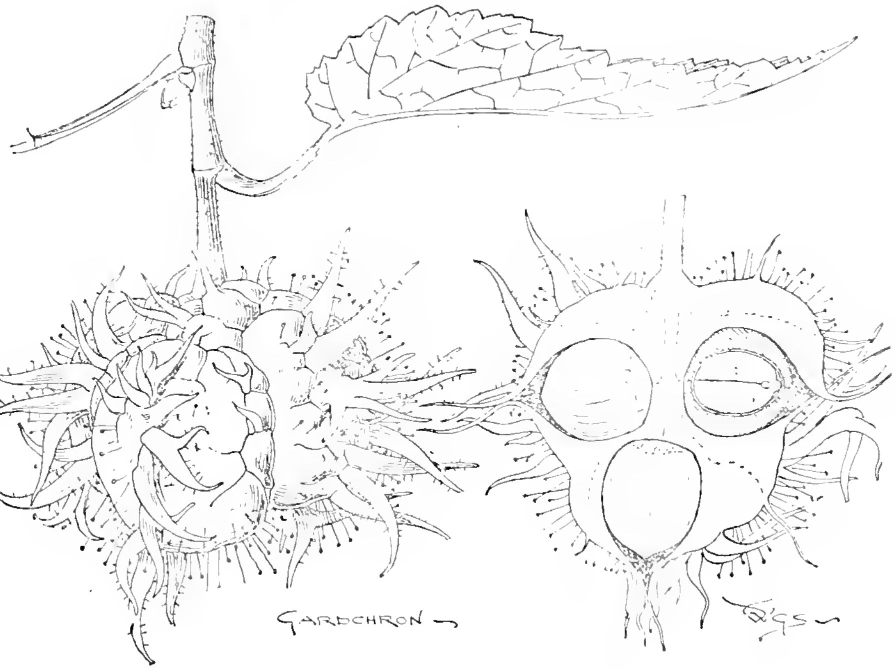


Fig. 106.—Fruits of Corylus colurna gathered at Kew this season.

PLANT PORTRAITS.

A[illegible] polymorphum [illegible] A[illegible] [illegible]folium, A. N[illegible] A[illegible] pseudo-platanus var. [illegible] A. [illegible] aureo marginata elegans; and A[illegible] Schwedleri.—*Revue L'Horticulture Belge*, September [illegible].

Rose Charlotte Klemm (Bengal hybrid).—[illegible] August, 1906.

Odontoglossum tigrinum splendidum.—[illegible] t. 2.

Lælia anceps Williamsi.—[illegible] t. 3.

Phalænopsis amabilis [illegible] t. 4.

Brasso-Lælia × Edward VII.—[illegible] t. 5.

Lælio-Cattleya × Bellerophon (L. [illegible] × C. gigas).—*Garten Flora*, t. 1,555.

Hedychium Borsigonianum.—*Revue Horticole*, September 1. Flower white.

Angræcum Arnoldianum.—*La Tribune Horticole*, September 8.

NOTICES OF BOOKS.

THE FLORA OF NEW ZEALAND. By T. F. Cheeseman, F.L.S., F.Z.S., Curator of the Auckland Museum. Published under the authority of the New Zealand Government New Zealand: John Mackay, Government Printer, Wellington, 1906. 8vo, pp. xxxvi. and 1199.

It is now upwards of forty years since the first part of Sir Joseph Hooker's "Handbook of the Flora of New Zealand" appeared, and, apart from the fact that it has long been out of print, a new "Flora" was required, as subsequent explorations have doubled the number of known species of certain genera of flowering plants, and increased the total by about a third. Botanists have been expecting such a work for the last twenty years, and the announcement in 1894 that the late Thomas Kirk had been commissioned by the New Zealand Government to write a "Students' Flora" was received with great satisfaction. But he died in 1897, when about two-fifths of his work was in type, so that it was considered necessary to begin afresh. It was not till April, 1900, that the task was entrusted to Mr. Cheeseman. Like Mr. T. Kirk, Mr. Cheeseman commenced his work after many years' study of the flora, both in the field and in the herbarium, and, judging from a necessarily cursory examination of the result, it will be found that he has produced an admirable book, which will be hailed with satisfaction both by botanists and horticulturists. Of course, the quality of the details can only be judged by practical use. Briefly, the contents are: Preface; History of Botanical Discovery; Descriptive Enumeration of the Native Vascular Plants; Synoptical Key to the Orders; List of Naturalised Plants; List of Maori Names; Glossary; Additions and Corrections, and Index. The general plan of the descriptive part is that of Hooker's "Handbook," with somewhat longer descriptions. Typography and paper are excellent, and the weight of the volume, in spite of its thousand pages, is only 2lb. 9oz. Kirk's "Students' Flora" included descriptions of introduced, as well as of native plants, which is a very great advantage, because the young student cannot be expected to distinguish the foreign plants from the native ones, and in some districts the foreign element predominates, "and there is no part of the country, however remote, into which some plants of foreign origin have not penetrated." Mr. Cheeseman fully realises the importance of equally accessible descriptions of the foreign plants, and hopes to publish them in a companion volume; but it was a condition of his undertaking that it should be so limited. Altogether, he states, upwards of six hundred foreign species have succeeded in establishing themselves; therefore, to include them, a second volume would have been necessary.

Here are some interesting statistics, concerning vascular plants only, be it remembered:—The total number of species described is 1,571, or 512 more than Hooker's "Handbook" contains. Of these 1,415 are flowering plants and 156 Ferns and allies; the former under 382 genera and 97 orders. Of the total, 1,571, no fewer than 1,143 are endemic. Of the remainder 366 extend to Australia and 108 to South America. As to the local distribution of the species, 789 are common to both islands; 219 occur in the North Island, which are not known to occur in the South Island, and 456 species are recorded from the South Island, but have not been found in the North Island. Twenty-three species are found in the Kermadec Islands only; 25 in the Chatham Islands; 10 in Stewart Island, and 48 in the outlying islands to the south of New Zealand, including under this the Auckland, Campbell, Antipodes, and Macquarie Islands.

Coming to the ordinal distribution, the Compositæ are first, with 221 species, or 14 per cent., followed by Ferns, which are represented by 138 species, including 20 species of Hymenophyllum.

The genera most numerously represented are as follows:—The left-hand column being the number in Hooker's "Handbook," the right-hand column the number in Cheeseman's "Manual," thus showing the increase.

	Hooker.	Cheeseman
Veronica	40	84
Carex	23	54
Celmisia	24	43
Coprosma	24	40
Ranunculus	20	38
Olearia	20	35
Senecio	19	30
Epilobium	17	28
Poa	9	25
Myosotis (including Exarthena) ...	13	23
Hymenophyllum ...	15	20
	224	420

Thus these eleven genera, mostly of world-wide distribution, have been nearly doubled, and now furnish nearly a quarter of the total number of species. A considerable number of new species are described in the "Manual," and one new genus, Townsonia, Orchidaceæ, placed between Adenochilus and Corysanthes. The arrangement and limitation of the genera is almost the same as in Bentham and Hooker's Genera Plantarum; but in the appendix the author repeats the Loranthaceæ under Engler's modified classification, in which the number of genera is five instead of three. *W. Botting Hemsley.*

The Week's Work.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Fig Trees in Pots.—The wood on these trees has matured more perfectly than usual. There should be no further delay in the re-potting of the trees if the work has still to be done. It is not necessary to re-pot a tree annually, especially if it has a tendency to make strong growth for by affording top-dressings and suitable manures good crops can be obtained. It is better to keep the trees somewhat restricted at their roots than to over-pot them, for in this latter condition the soil would become sour, and some of the fibrous roots would decay. We have not employed any fire-heat to assist the trees in maturing, and if the roots are not kept too moist it will not be necessary.

Orchard-house Trees.—Carefully examine each tree. Young trees may be given a slight shift, and the older ones turned out of their pots, the roots reduced, and the trees replaced in pots of the same size. Use clean pots and provide each with good drainage. The roots need a compost consisting of rough turfy-loam, a liberal quantity of old mortar-rubble, and a sprinkling of bone-meal, the employment of the latter being preferable to the use of animal manures. Let ample room be left when re-potting for a good collar of loam and cow-manure to be applied later on as a top-dressing, and to provide a kind of basin for holding liquid manure when this is required. If young trees are required from the outside fruit-quarters to fill blank spaces, let these be potted up without delay. It is essential to pot such trees firmly, using a flat rammer. If the house can be spared, arrange the trees in it as soon as potted, and employ liberal ventilation by day and night. Should house-room not be available at present, place the trees outside in an open, but sheltered place. Apply a good watering to settle the soil about the roots, and syringe them daily on fine afternoons.

The Fruit-room.—If not already done, this room should now receive its annual cleaning. Thoroughly scrub the shelves and windows with hot water and soft soap. The work is better performed on a fine day, so that the doors and windows may be thrown wide open, so that the floor and shelves may dry quickly.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

The Planting of Roses.—Whether it be the formation of a new rosary that is contemplated, or the renovation of one already existing, or simply the addition of extra Roses to the flower borders, the work must be considered now in all its details, and operations commenced without further delay. If it is proposed to make a new rosary, a situation should be selected that is exposed to the sun and air, but, at the same time, is provided with sufficient shelter to protect the plants from violent winds. If it is impossible to choose a site with existent protection, means must be adopted to provide the same. A fencing 8 to 10 feet in height made of some durable material, and afterwards clothed with Roses and other hardy climbing plants, would make a very pleasing and artistic protection, or even a fence made of stout bamboo canes nailed securely to strongly-formed double rails, and so covered, would answer the purpose admirably. Failing the convenience to erect something similar to these fences, then hedges of Holly, Beech, Hornbeam, or Thuya gigantea could be planted. The Thuya would be especially suitable, as it is capable of growing quickly, and of forming a dense hedge of good appearance. It will easily bear close clipping, and this becomes essential when the hedge has attained to the requisite size. The best soil for Roses is strong, tenacious loam, so on a poor ground the beds should be excavated to the depth of 3 feet, and filled with some soil of this character. Broad turf-walks if maintained in good condition, seem always to be the most in keeping with a rosary, and to some are preferable to ordinary gravel walks, but this is a matter of opinion.

The laying-out of the ground.—Having selected the position for the new rosary, and determined upon its size and boundaries, the next important step is to produce the whole of the design on paper, describing to scale the plan of the different beds and borders, the positions of trellises, poles, pergolas, arbours, and seats. In planning Rose gardens much depends on the size and shape of the ground, and upon the individual taste of the designer, but it may be stated as an accepted principle that simple figures, and avoidance of sharp angles in the formation of the beds are in accordance with the best taste, and that intricate schemes of laying-out are not to be commended. My notes on this subject of forming a rosary written in the early part of the year (see p. 86 in the issue for February 10) may here be repeated, namely, that the best effects are obtained by providing beds to contain each its own particular variety, and that they should be large enough to hold from 20 to 30 plants each. Larger beds might be planted with a number of varieties, taking care not only that the flowers will agree in colour, but also that the plants will be of the same habit of growth. In these larger beds half-standards could be used with advantage for planting amongst the dwarfs. When it is practicable to do so, exclude hybrid perpetuals from the rosary, and also the rampant-growing Polyantha varieties, and cultivate principally the decorative Roses of the Tea-scented Hybrid Tea, China, Noisette, and Dwarf Polyantha types, because of their perpetual blooming habit. The season of blooming of hybrid perpetuals is comparatively so short that it is generally desirable that they should be grown in the "garden for cut flowers," and the strong-growing Polyantha Roses should be restricted to the rosary in the wild garden.

Obtaining the plants.—In commencing to make a new rosary now, one cannot think of its being planted before next February, and as, generally-speaking, most of the Rose planting is done in the last two weeks of October and in the month of November, it is apparent that if the selection and buying of Rose plants is left till then the chances of obtaining good plants will be remote. Herein is an advantage of having a complete plan of the rosary on paper, and the varieties and the numbers of each required for planting and filling the beds determined upon, as it is then an easy matter to despatch the order at once, and thereby have the first choice of plants from the nurseries. As soon as they are received from the nurseryman they should be carefully planted in a spare piece of ground in the most favoured part of

the kitchen garden, where they can remain until the spring. In spring they can be taken up and planted in their permanent quarters without suffering in any way from the enforced sojourn in the kitchen garden.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Preparations for Winter.—The necessary preparations for the forcing of vegetables in winter should now be made. Mushroom houses should be examined and any repairs that are needed executed. I prefer the use of wood-laths for Mushroom beds rather than slabs of slate, which are made of a much colder material. The wood-laths, however, require renewing frequently; but this expense is compensated by a greater crop, for if the laths are placed 2 inches apart and the beds are spawned on the bottom, as well as on the top, an additional supply is secured from beneath the bottom of the bed. It is surprising how Mushrooms will grow head downwards almost as readily as upwards. Bins should be made for the forcing of Seakale, Rhubarb, Chicory, &c., and if they are constructed with a lid, after the manner of a large chest, they will be found very convenient. Small saladings—such as Mustard and Cress, and Radishes—may still be sown in a heated frame. For a winter supply, the former salad is best sown in boxes of a convenient size.

Jerusalem Artichoke.—This vegetable, having now completed its growth, should be lifted and stored. The tubers should be graded and the sets for next year's planting selected. Be careful that no small tubers remain in the ground, for these would grow next year and become a nuisance to the succeeding crop. Store Jerusalem Artichokes in the same manner as that advised for Potatos.

Globe Artichokes will now be benefited by having some long litter or leaves placed around their crowns, which will act as a protection from frost. It is advisable to put up a quantity of the offsets in case a severe winter should kill the parent plants, an occurrence which frequently happens. The young plants can be protected in a cold frame, and be planted out during the following April, and as the heads from these young plants will not be fit for cutting until the autumn, they will form a succession to the older plants.

Stachy's tuberifera (the small Chinese Artichoke) should now be lifted and be stored until wanted. This vegetable, so far, has not enjoyed any great popularity, perhaps on account of its small size and apparent trouble in its preparation for cooking; but it makes a useful change and deserves to be more largely grown. Select the largest tubers and store them in sand until they are required. Do not allow too much air to reach them, as they are somewhat given to shrivelling. Any position that is just free from frost will suit them well.

Leaves have now commenced to fall from the trees, and provision should be made for storing them as fast as they are collected. Select all the Oak and Beech leaves for hotbeds, as these produce a far more lasting heat than other kinds. In many establishments the collecting of leaves is an important item, but more often than not all sorts are put together. By a judicious selection a much better use could often be made of this valuable heating material. Select some of the best, and keep them in a dry place for the purpose of blanching Endive, &c. Leaves of last year's gathering should be turned over in readiness for wheeling on to the land during frosty mornings. The frequent turning of fresh leaves is one of the best aids to their rapid decay.

Herbs.—Any shortage in the supply of dried herbs should now be made good, and before the plants are finally cut down by frost. Cut the growths when they are quite dry, and expose them well before their final storing.

THE HARDY FRUIT GARDEN.

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

Insect Pests.—In some districts it will be found that early in October many Apples fall to the ground, ripened prematurely by the presence of the grub of the Codlin moth (Carpocapsa pomonella). Upon examining the fruits that have dropped there is seen a small hole near to the "eye" of the fruit, which leads to the seeds. The marauder may not be present when the fruit has dropped, in which case it has escaped by another aperture near to the stalk. It is a well-known fact that fruits with large, open eyes are most liable to be attacked by this pest. After the damage is done the insect generally rests in the soil at the base of the tree until the next season, when it ascends the tree again by means of the stem. The old-fashioned practice of placing grease bands around the stems of the trees is a good preventive against the ascent of the pest, as are old hay-bands, pieces of cloth, &c., similarly placed. These bands should be at once placed around the stems of any badly-affected trees, and the soil underneath the trees should be dressed with a small quantity of gas lime, or with a like proportion of ordinary lime. Sprayings of an alkali wash applied both early and late in the season do much to keep this pest under, and tomtits, although they are very vexatious when they attack the ripe fruits, are helpful in destroying many of the larvæ. Another insect, called the Apple sucker, Psylla mali, also does much harm, for these pests in the spring suck the juices of the flower buds, causing the flowers to drop. These insects are very busy during October, when they may be seen leaping from leaf to leaf. They deposit their eggs in small crevices in the bark, where they remain, if unmolested, until the following spring. The trees should receive a thorough syringing with petroleum emulsion as soon as the fruits have been gathered. Richards' XL-all winter wash is another very suitable insecticide for this purpose.

Plums, Currants, Gooseberries, Raspberries, and even Nuts will all benefit by being washed with a suitable insecticide. A calm day should be chosen for the operation: it is better for the operators, and less waste is incurred.

Bands or ties that have done duty for the past year should be removed and dipped in a strong caustic solution, as many insects choose these for their hiding-places. Any that are worn out should be removed.

Repairs to Old Walls.—After the fruits have been gathered is a suitable time to undertake this kind of work. The trees should be nailed-in and made secure to a few stakes driven in the ground in front of them. The walls can then be re-pointed, or, if this cannot be done, they should receive a good coating of limewash, well rubbed in to the crevices. A good wash consists of 1 peck lime, ½ peck soot, ½ gallon parathin, well mixed up together to the consistency of paint.

Late Fruits.—Late Pears still remaining on the trees should have some nets placed over them to protect them from the birds and frost.

THE ORCHID HOUSES.

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

The Cool House.—The Brazilian Oncidiums, O. Forbesii, O. crispum, and O. varicosum, are now rooting freely and developing flower spikes; they will require a considerable quantity of water at the roots until the flowers open. These plants are very apt to become weakened from over-flowering, and therefore no extra strong spikes should be allowed to remain on the plant for a period long after all the flowers have expanded. Very weak pseudo-bulbs will be greatly benefited if the spikes are removed as soon as they appear. Plants that produced an exceptionally strong inflorescence last year, and whose new pseudo-bulbs have deteriorated in size, should also be relieved of their spikes this season. O. concolor has completed its growth, and should be kept rather on the dry side during winter. Lycaste Skinneri and its varieties are growing freely in this house, and will require to be kept thoroughly moist at the root until their pseudo-bulbs are fully made up. When the Odontoglossums have been re-potted, carefully look over them every evening for slugs, because some are almost sure to have been introduced into the house by means of the fresh sphagnum-moss used for potting. Baits of young Lettuce and Cabbage leaves, also pieces of Potato hollowed out, are always useful, and many slugs may be caught by placing shallow pans half filled with bran about the stages. No trouble must be spared in this matter, especially for the first two months after repotting; if only a few are destroyed occasionally, their reproduction will be checked, and many young roots and valuable spikes will be saved. Some of the Odontoglossums are showing their spikes, and these may be protected by wrapping a piece of dry wadding around their base. At this time of the year when the weather is cool and moist, a dark, powdery fungus sometimes appears on the under sides of the leaves of the Odontoglossums, which, if not immediately checked, will quickly distribute itself all over the house and cause great disfigurement to the plants. Examine the plants carefully every day, and on its appearance cut off the part of the leaf affected and burn it; then turn the valve of the hot-water pipes sufficiently to keep them just lukewarm; additional ventilation may then be afforded. It is also advisable to use less water at each damping down.

In the intermediate house Zygopetalum maxillare is showing its flower spikes, and must never be allowed to get dry at the root. This plant in its native country (Brazil) grows on the stems of tree-Ferns, and the grower can therefore imagine the small amount of light the plants obtain. In cultivation it is well to keep the plant on the tree-Fern it was imported on, grow it in a shady position in the intermediate house. Keep it free from mealy-bug insects, which are nearly always imported with it. Strong plants of Cymbidium giganteum and C. Lowianum that are producing flower spikes must now be given every encouragement, placing them in a light position on the stage, and gradually increasing the water supply, damping frequently between the pots. Plants that are not showing spikes may be kept rather dry for several weeks longer, otherwise they may recommence to grow and fail to produce any spikes at all.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

The Resting Season of Plants.—The season has arrived when most plants are preparing for a period of rest, and to the plant-grower the study of rest in plants is important. It is essential for success in their culture to have a knowledge of the plants as they grow in their native habitat, and such details as their seasons of growth and of rest, and whether the plant is deciduous, bulbous, or evergreen are points to be studied. To bring about a gradual rest in plants high temperatures at night time must be avoided, for excessive artificial heat causes the plants to become very dry, and renders watering necessary, thus preventing the proper resting of the plant. In resting Allamandas, Dipladenias, Stephanotis, Ixoras, and other plants of a similar kind, care should be taken not to withhold water to such an extent as to kill the young fibrous roots and shrivel up the tissues of the plants. When any of the above-named plants require water, let a thorough soaking be given, so that the whole of the roots may receive a wetting, after which no more water should be given for a period of some days, the length of which will depend upon the amount of moisture in the atmosphere. The resting of tuberous and bulbous plants, such as Gloriosas, Gloxinias, Begonias, Caladiums, and Achimeneas requires different treatment to the above, for, although all the roots of these subjects may die during a period of rest, the plant has the power of forming new roots from its store of reserve material. Very often these bulbous plants are carelessly treated after their period of flowering, and are allowed to remain in some neglected corner of the pit, under the shade of other plants, where they are given no water, although this is just the time they need attention so as to enable them to flower again the next season.

The Stove.—The temperatures in this structure should be gradually reduced during the winter months until they reach 68° to 70° by day, and 62° to 65° at night. Open the wall ventilators on all favourable occasions. The temperature in the conservatory and greenhouse should range from 58° to 60° by day, and 55° to 58° by night. Circulate a little heat in the hot-water pipes on cold nights to keep a buoyant air in these structures.

EDITORIAL NOTICE.

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Oct. 13	Dutch Gardeners' Soc. meets.
MONDAY,	Oct. 15	Nat. Chrys. Soc. Com. meets at Essex Hall, Strand, 3 p.m.
TUESDAY,	Oct. 16	R.H.S. Show of British Grown Fruits at Westminster (2 days).
WEDNESDAY,	Oct. 17	Royal Bot. Soc. Show, Regent's Park.
SATURDAY,	Oct. 20	German Gardeners' Soc. meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—50·7°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, October* 10 (6 P.M.): Max. 69°; Min. 59.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, October* 11 (10 A.M.) Bar., 29·8, Temp., 65; Weather—Fine.

PROVINCES.—*Wednesday, October* 10 (6 P.M.): Max. 69° Southampton; Min. 55 Northeast Coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY TO FRIDAY—
Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY AND WEDNESDAY—
Two days' Sale of well-grown Nursery Stock at Shortlands Nursery, Ash, Surrey, by order of Mr. H. Fleet, by Protheroe & Morris, at 12.

WEDNESDAY—
Azaleas, Rhododendrons, Palms, Roman Hyacinths, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY—
Fourth Annual Sale of Nursery Stock at Old Nursery, Spring Grove, Isleworth, by order of Mr. H. A'Bear, by Protheroe & Morris, at 12.

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

Potatos.

So long as Potato tubers continue to form such an important part in the food of the nation as they do at the present time, so long will all matters connected with their improvement and cultivation have a commercial as well as a scientific interest and value. Trials of Potatos, therefore, although often inconclusive, and by no means a sufficient basis upon which to build theories and make rules that are applicable to all districts with their extremely variable conditions, have nevertheless an interest in proportion to the thoroughness of the tests and the efficiency of the means taken to safeguard the trials from the influence of circumstances that might tend to confuse the issues. Mr. Arthur W. Sutton, on Monday last, when addressing a party of about 80 gentlemen who had journeyed to Reading to inspect some trials Messrs. Sutton and Sons have carried out during the present season, said that the firm had made the trials in order to afford interesting results that the visitors might see and interpret as they felt disposed, and it was not claimed that the results of all the experiments had any commercial importance or could be applied usefully in practice. But we believe there are some questions that can be conclusively proved or disproved by simple, well-conducted trials, whilst there are others that must necessarily be inconclusive, and likely to mislead those who choose to regard the results as affording an infallible guide for cultivators. To this latter class belong the trials of the cropping qualities of the different varieties. Our experience of Potatos has proved this much: that Northern Star may be the best cropping variety in one garden and a very indifferent cropper in another. The same may be said of other varieties. In regard to flavour the case is similar. Sir John Llewelyn may yield the best-flavoured tubers possible in Glamorganshire, but when cultivated in a garden at Kew the tubers were scarcely eatable. The local conditions of soil and climate have such an overwhelming influence upon yield and flavour that, after an extended trial of a large number of varieties in the same soil, the results amount to little more than proving what are the best varieties for cultivation in that particular plot. For these reasons we think that the trials of this nature were the least interesting of those conducted by Messrs. Sutton; some of the others, however, were of far more permanent value. The trials were inspected by some members of the Scientific Committee of the Royal Horticultural Society in July last, and a report of the proceedings was published in the issue of the *Gardeners' Chronicle* for July 28.

In many respects the later inspection served to confirm the conclusions arrived at in July, and we need, therefore, only refer on this present occasion to some of the trials that were not remarked upon then, and to some in which additional information was forthcoming. The experiments were carried out in specially-selected ground attached to Southcote Manor, an old, dismantled residence of considerable historical importance, about two miles out of the town of Reading.

The first series of trials inspected had reference to Solanum Commersoni and the Potato which M. Labergerie asserts originated as a sport or mutation from that species in his nursery. After examination of the lifted tubers and of growing plants, nothing material was discovered by which the tubers of M. Labergerie's S. Commersoni "Violette" could be distinguished from those of the German variety of S. tuberosum, known as Blue Giant. This was also the opinion formed by the Scientific Committee when the plants were in active growth. The evidence that M. Labergerie's plant really originated as a sport from S. Commersoni is not conclusive, and seems very improbable.

MATURED AND ONLY PARTIALLY-MATURED TUBERS.

Comparative trials were made of eight varieties grown from seed (tubers) harvested last season in the South of England, Lincolnshire, Scotland, and Ireland respectively. Since the earlier inspection the tubers had been lifted and weighed. In five instances the heaviest crop was obtained from Irish tubers, and in the remaining three instances from Scotch tubers. The difference between the results obtained from South of England tubers and "seed" from Ireland or Scotland was very considerable, and may be regarded as conclusive, proving the greater value of those from the less warm climates. Take an instance: In Sutton's Ninety-fold the produce from the South of England tubers was 10 lbs., that from Lincolnshire sets 1 qr. 25 lbs., from Scotch tubers 2 qrs. 9 lbs., and from Irish 3 qrs. 14 lbs.

A further experiment to show the effect of seed (tubers) fully and only partially matured was undertaken because there existed a well-based impression that the result of the trial just alluded to would prove the superiority of northern-grown seed-tubers. If these are more productive, why are they so? The trial served to show that the difference is due to the tubers becoming harder, or more mature, in the southern climate. In all but two instances in this trial the immature tubers gave the greater yield, and in the two exceptions the "mature" sets were obtained from Scotland, and would, therefore, be less fully matured than southern-grown tubers. The variety May Queen yielded from mature tubers only a crop of 9 lbs., but from immature tubers the yield was 1 qr. 18 lbs., and most of the varieties furnished similar results. It may be pointed out here that the mature and immature tubers used for this particular trial were all southern-grown specimens, but in the one case the tops (haulm) had been removed whilst still growing, or the tubers were lifted at that stage. By the terms mature and immature is signified a condition of unripeness, which has nothing to do with the size, or even age, of particular tubers. It is not known with certainty what is in the mature tuber that renders it less productive. From frequent remarks made by those present at Reading we gathered that most growers believe it to be due to its harder skin, but it is much more likely to be caused by chemical changes that take place in the tuber itself. In any case, the cultivator of large areas who plants his ground with tubers that have been grown in the South of England cannot expect to obtain anything like the yield that it is possible for him to obtain. Surely this fact is one of the utmost importance.

SETS AFFECTED WITH FUNGUS.

Some experiments with sets which were known to be affected with the common fungus disease (Phytophthora infestans), also with tubers affected with brown streaks along the fibro-vascular bundles, and with internal brown spots, were of less practical use, although the results were somewhat unexpected. The variety Early Rose, for instance, yielded 2 qrs. 25 lbs. from healthy tubers, and 2 qrs. 16 lbs. from tubers slightly affected with Phytophthora infestans. But, although the difference in the yield was but slight, no discreet cultivator would knowingly plant tubers that are unsound, it being to his interest to keep the ground as free from the taint of disease as possible.

WITHY-PEELINGS AS MANURE.

Of much greater practical interest was an experiment with two varieties to test the relative value of withy rod-peelings and farmyard manure. The varieties were Ninety-fold and Superlative, and there were six rows of each variety, 12 plants in a row. Half the sets were planted in soil manured with rod-peelings at the rate of 30 tons per acre, and half in ground manured with an equal weight of farmyard manure. Ninety-fold yielded 1 cwt. 0 qrs. 10 lbs. with the rod-peelings, and only 3 qrs. 18 lbs. with farmyard manure, whilst Superlative produced 1 cwt. 2 qrs. 7 lbs. from the rod-peelings and 1 cwt. 1 qr. 11 lbs. from the ground treated with farmyard manure. We believe that these peelings are used for manure in most of the districts where they are obtainable in large quantities, but

what supply there would be for commercial purposes has to be determined. The peelings are allowed to rot for one year before they are dug into the land.

The question as to whether it is most profitable to plant small, medium, or large-sized sets is one that has been debated for years past. The results obtained at Reading show that in each instance the largest sets produced slightly heavier yields than those obtained from the medium or small sets. To take one instance, Epicure yielded 2 qrs. 12 lbs. from small sets (2 ozs.), 2 qrs. 14 lbs. from medium sets (3 ozs.), 2 qrs. 26 lbs. from large sets (4 ozs.) and 2 qrs. 13 lbs. from large sets which had been cut. The practical man will probably find that the extra yield from the large sets would not be more profitable, because the cost of the "seed" would be much greater than for medium tubers, which yield almost as heavy a crop. At the same time, it may be pointed out that there were fewer "chats" or small tubers in the produce from the large sets than in that from smaller ones.

The value of earthing-up Potatos was not shown to great advantage in a trial made with the variety Superlative. The earthed-up plants produced 3 qrs. 20 lbs., and those growing on the flat 3 qrs. 14 lbs. It must be remembered, however, in connection with this subject that earthing-up has also the effect of preventing any of the tubers from getting "greened," and it serves to protect the tubers from the Phytophthora, which is believed to attack the foliage of the plants in the first instance.

THE REMOVAL OF FLOWERS.

The variety Flourball, having the habit of blooming freely, was subjected to a test to show the effect on the crop of picking off the flowers immediately they appeared, and before berries were formed. The result was in favour of the plants that were relieved of their flowers, the weight being 2 qrs. 21lbs. against 2 qrs. 15 lbs. Mr. Herbert Sutton, who explained the trials on the experimental plots, remarked that Thomas Knight, in a paper published in the *Royal Horticultural Society's Journal* in 1810, stated, in reference to this question, that probably the saving of sap that might be thus obtained would result in increasing the yield of tubers by about one ounce per root. Messrs. Sutton's experiment showed an increase of nearly four ounces per root.

A question of botanical interest, and of practical interest, so far as cross-breeding is concerned, was raised in an experiment to prove the possibility, by removing all tubers as they are formed, of causing varieties which do not usually do so to set their blooms and form berries. Knight wrote about 100 years ago that he had found the removal of the tubers had this effect, and it may be granted theoretically it would not be surprising that if a plant having two methods of reproducing itself, and finding one means continually rendered ineffective, should make an extra effort to secure its reproduction by the other means. But Messrs. Sutton's experiment was less convincing. The varieties were Ringleader, which formed trusses of bloom, but no buds opened; Harbinger, which also formed weak trusses; and Evergood, which opened a few very weak flowers. It has to be pointed out, however, that the tendency had to be created in these varieties, for, whilst no bloom has been seen on Ringleader for 15 years past, Harbinger has never been known to bloom at all. For the purpose of inducing such varieties to flower, it might be advantageous to start them very early in the season in pots, and starve the roots somewhat, over a long period of growth.

A trial of sprouted sets as against non-sprouted and shrivelled sets resulted in all cases in favour of the sprouted sets.

An interesting trial bearing on the question of deterioration of varieties was that of some Magnum Bonums from a stock which was purchased from Messrs. Sutton's in 1876, when this variety was first distributed. The stock had been grown continuously on the same soil, or, at least, in the same locality, and crops now as well as it ever did. In all that time the sets were never cut, and care was taken to plant each year sets which had not become fully matured before lifting.

Further trials were shown of Potato species upon which notes have already been published in these pages, and of varieties resembling Abundance and Up-to-Date, and of Potatos which gave the best results in the Reading University College Trial Grounds and County Council trials last season.

OUR SUPPLEMENTARY ILLUSTRATION represents the inflorescence of Bulbophyllum virescens, a fine species for which Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), was awarded a First Class Certificate at the Holland House show on July 10 last, an award which has only been accorded to two other Bulbophyllums, viz., the allied B. Ericssoni (which also received the much more appropriate award of a Botanical Certificate), and was illustrated in the *Gardeners' Chronicle*, January 23, 1897, and B. Dearei of the Lobbii section. The type Bulbophyllum virescens was first described by Mr. J. J. SMITH of the Buitenzorg Botanic Garden, Java. A few years ago Messrs. Hugh Low & Co. imported, from the New Guinea region, a Bulbophyllum which was taken to be the closely allied B. Ericssoni, but on flowering the plant proved to be B. virescens, and it is probably from Messrs. Low's stock that the few plants in cultivation have been derived. The flowers of this species differ mainly from those of Ericssoni in that they are narrower and unspotted, those of B. virescens being greenish white veined with pale green, the face of the column and the hinged labellum being tinged with rose-purple. The other known ally of B. virescens is B. Pahudii, which is probably not in cultivation. All the species thrive best grown in baskets or on rafts and suspended in a warm, moist house. They are evergreen, and require a liberal supply of rain water, especially when they are making their new growths.

FORESTRY AT OXFORD.—The University now provides a complete course of instruction in scientific and practical forestry, and grants a diploma in forestry to successful students. This course is recognised by the Secretary of State for India, and includes special instruction by Professor SCHLICH and Mr. FISHER, formerly of Cooper's Hill College. Two years of this course are taken in Oxford, and a third (nine months) on the Continent. Candidates for the diploma must (1) have passed Responsions, or an equivalent examination, or give evidence of having received a good general education satisfactory to the committee appointed for that purpose; (2) have satisfied the examiners in the preliminary examination in the Honour School of Natural Science in Mechanics and Physics, Chemistry, and Botany, or in some examination accepted by the delegates as equivalent. The diploma can be combined with the University degree of B.A., by keeping a year's residence previous to the commencement of the course (which would be devoted to passing Responsions, and the science-preliminary examinations indicated above), and by obtaining a class in the Honour School of Natural Science, in either botany, geology, or zoology. The selection of candidates for the Indian Forest Service is at present done (1) partly by an examination held by the Civil Service Commissioners; (2) and partly by nomination. At the end of the three years' course, successful candidates receive £100 for passage-money and outfit, and are appointed Assistant Conservators of Forests at a salary of Rs 350 a month, which, with exchange compensation, may be placed at £300 a year. The grading of the department is such that they can rise to a salary of Rs. 2,500 a month, or about £2,000 a year. Indian Forest officers can retire after 22 years' actual residence in India on a full pension, with a *maximum* of £525 a year, and after 18 years' residence on a proportionate pension. There is also a provident fund managed by Government. The recruiting of the Forest Departments in Ceylon and in the Federated Malay States is effected on lines similar to those applying to the Forest Department of India. Further details can be obtained by applying to the secretary of the delegacy, Professor SCHLICH, 29, Banbury Road, Oxford. *Times.*

GLADIOLUS WHICH FLOWERS IN THE SAME YEAR FROM SEED. We have received from M. ROEMER, Quedlinburgh, specimens of Gladiolus which have flowered and produced seeds in the same season as raised from seeds. The strain has been named Praecox, and was obtained by constantly selecting early-flowering varieties from the general collection of Gladioli. Seeds are sown in March in a warm pit or frame. The young seedlings commence to show themselves at about the beginning of April, and this season three plants opened their first flowers on July 12. The young plants should be planted in the month of May, in order to obtain strong flower spikes, and the methods of cultivation followed must be those found suitable for summer-flowering plants. There is great variety in the colours of the blooms, and their size leaves nothing to be desired. Corms of the size of a Hazel nut produce spikes with 12 to 16 blooms. One of the specimens received had a small corm at the base and partially-ripened seeds on the flower spike.

THE KING'S BOUQUET.—Messrs. LITTLE & BALLANTYNE forward us a photograph of the basket of flowers presented by Miss WATT to the King on his recent passage through Carlisle. It shows a light and elegant arrangement in which Orchids predominate. Among the flowers were Dendrobium Phalaenopsis, Cattleyas, Odontoglossums, Phalaenopsis, and Roses with a setting of Asparagus.

PRESENTATION.—Mr. W. R. PRINCE, for the past 5½ years gardener to General Sir R. POLE-CAREW, K.C.B., Antony House, Devonport, was presented, on his retirement, with a watch and chain by the garden, household and estate employees.

APPOINTMENTS.—According to the *Kew Bulletin*, No. 6 (1906), the following appointments have been made recently: Mr. HARRY DODD as Curator of the Botanic Station at Onitsha, Southern Nigeria, and Mr. W. HEAD and Mr. RUPERT BADGLEY as Probationer Gardeners for service in India.

MRS. THEODOSIA SHEPHERD.—American papers record the death of this lady at Ventura, California. Beginning as an amateur with little knowledge and no capital, she eventually succeeded in building up a business of which all Californians are proud. She was the pioneer seed grower of the State, and became almost as well known as BURBANK himself.

Chrysanthemums in Paris.—A great exhibition of Chrysanthemums, together with Orchids and other flowers, fruits and vegetables, will be held in the Conservatories at Cours la Reine from November 3-11.

Dr. Oudemans.—The death of this botanist is announced. He died at Arnhem, where he had resided since resigning the professorship of botany at Amsterdam. Prof. Oudemans took a leading part in the botanical congress and exhibition at Amsterdam in 1865, the immediate precursor of the memorable Congress of 1866 in London. Dr. Oudemans' later researches were principally confined to the fungi.

Trafalgar Day Celebrations.—The Nelson Column in Trafalgar Square will be decorated largely this year with autumn tinted Oak leaves, which will take the place of the Laurel formerly used for the festoons and wreaths. The decorations will be completed by 8 a.m. on the 20th inst. and be removed on the 24th. Messrs Geo. Bellgrove & Co., Hammersmith, have been entrusted with the work for the seventh consecutive year.

Ammonia Vapour and Plant Growth.—The practice of placing ammonia in Orchid houses in order to ensure vigorous growth is according to Prof. Bottomley, in a paper read before the Botanical section of the British Association of York, due to the presence of bacteria in the spongy covering of the roots of the Orchids. These bacteria utilise both the nitrates and the nitrites, and absorb the ammonia vapour along with the watery vapour normally condensed by the spongy root covering.

The Forest Flora of New South Wales.—Mr. J. H. Maiden continues the publication of this work, to which we have often referred. In Vol. II., part X. (part XX. of the complete work), we find additional information in regard to the trees dealt with in the preceding 19 parts, no new species being added, the part being supplementary. Vol. III., part I. (part XXI. of the complete work), contains letterpress and plates of Flindersia Bennettiana, Eucalyptus Andrewsi, and Casuarina inophloia.

A Pendulous Wellingtonia.—The *Revue Horticole* for September 1, 1906, publishes a description and illustration of a very remarkable pendulous form of Sequoia gigantea growing in the gardens at the Trianon, Versailles. It resembles an umbrella, the bare stem representing the handle, the pendulous branches being comparable to the ribs of the umbrella when closed. As a curiosity it is very striking.

Berberis stenophylla ×.—The *Revue Horticole* announces the occurrence of fruits on this shrub, a hybrid between B. empetrifolia and B. Darwinii. The berries are small and globose, purple in colour. Whether the seeds will prove fertile remains to be seen.

The Classification of Plants.—It was a "happy thought" which induced the authorities of the botanical department of the Natural History Museum, Cromwell Road, to illustrate the chief epochs in the development of a natural system of classification, that is to say, a system which shows the actual (or assumed) relationships of plants as contrasted with an artificial system which is based on the differences presented by one set of organs. This has been done by exhibiting a series of works from the time of Dioscorides, A.D. 40, to that of Engler, 1903. The authors, whose principal works are thus shown, are Brunfels, Turner, Gerard, Bauhin, Caesalinus, Morison, Ray, Tournefort, Linnæus, Adanson, de Jussieu, A. P. Candolle, Robert Brown, Lindley, Endlicher, Hofmeister, Bentham, J. D. Hooker, Eichler, and Engler. It is obvious that the selection has been a rigid one since Brongniart, Decaisne, Baillon, von Mueller, von Martius, Alphonse de Candolle, and others whom we might expect to find in such a collection are not represented. It may be hoped that the idea here broached may be extended and followed up, and that physiologists such as Grew, Hales, Knight, to name only Englishmen, may find a place in the museum by the side of the systematists.

The Importance of Lime-wash on Fruit Trees.—It is common belief that the whitewashing of the stems and limbs of fruit trees was one of the means of killing parasites of various kinds—animal and vegetable, their eggs and spores—and the action of the lime is rendered more effective by the addition of copper sulphate, which, however, does not make the whitewash any darker. Perhaps better than a brush is the application of the wash by means of the garden engine or force pump, or a large syringe. The limewash, according to Dr. Koch, of the Royal and Imperial Plant Protection Station at Vienna, does something more than this in preventing the severe frosts of early spring causing injury to the bark and the consequent frost canker that admits water and frost. In early spring the sun, in that part of the world, warms the bark to a considerable degree, and to a certain extent the wood likewise, and the stem increases in bulk. In the following night, if cold, the bark of the stem parts with its warmth rapidly, and is drawn together round the stem, &c., with the result that the bark splits and the injury has begun. Whitewashing of the bark prevents the warming of the same to a great extent, and its injury by night frosts.

American Mildew in Sweden.—The Swedish Pomological Society is taking vigorous measures for the extermination of the American Gooseberry mildew (Sphærotheca mors uvæ), which has been devastating both nursery and private gardens throughout the country. The Minister of Agriculture granted the sum of 1,000 kronen (£55) towards the publication in the newspapers of a full description of the disease and instructions for ridding gardens of this pest. Gardeners are recommended to root up and burn all infected bushes and to prevent, as far as possible, the spread of the mildew by spraying the bushes thoroughly with a strong mixture of sulphur. Care has also to be taken to guard against the dissemination of the fungus through the clothes and tools of the workmen. Moreover, the Government is forbidden to import or to transplant Gooseberry bushes and to offer them for sale before the end of the year 1907. Compensation will be given to growers for the loss they have sustained through the uprootal and destruction of their plants, precedence being given to those who have cultivated them for the purposes of trade. The utmost vigilance is necessary, for, were the disease allowed to remain for a year, it would be practically impossible to conquer it. In the neighbourhood of Stockholm large areas are devoted to the growth of standard bushes. These require special attention, as Ribes aureum is often cultivated beneath the trees. Nurserymen are charged not to introduce any wild stock. Currants are also liable to this disease, especially the red and black, and in one instance Raspberries also have suffered.

Publications Received.—*Report of the Director of Agricultural Education, Monmouthshire.* In addition to the ordinary branches of agriculture encouraged by the education committee we note that phenological notes have been taken and tabulated relating to the date of the appearance of flowers, birds, &c. These, it continued, will be of increasing value.—*Reports on Experiments with Crops and Stock.* Midland Agricultural and Dairy College, Kingston-on-Soar. The experiments dealt with manuring of seeds, Hay, varieties of Barley and Potatos, manuring Potatos, Mangels and Swedes, and spraying Potatos. The results are carefully tabulated, and afford a satisfactory proof of useful work.—*The Jamaica Bulletin of the Department of Agriculture* for August contains notes on Para, Lagos, and Castilloa Rubber, on cocoanuts, coffee, camphor, and tobacco dust as a fertiliser and insecticide.—*The Queensland Agricultural Journal* for August includes articles of the usual type upon crops and stock.—Porto Rico Agricultural Experiment Station. Bulletin No. 7, *Vegetable Growing in Porto Rico*, by H. C. Henricksen. A carefully prepared handbook, which should lessen some of the difficulties attendant upon growing vegetables in Porto Rico, where the chief drawbacks are the scarcity of good seed, and a prolonged wet season. Mr. D. W. May is the agent in charge of the station.—*Proceedings of the Academy of Natural Sciences of Philadelphia.* January to April, 1906. The contents include papers upon various species and genera of fish, molluscs, and birds.—*Agricultural Bulletin of the Straits and Federated Malay States.* Edited by H. N. Ridley and J. B. Carruthers. May and June. These deal chiefly with rubber cultivation.—*Bulletin of Miscellaneous Information, Trinidad*, edited by J. H. Hart, F.L.S. A quarterly publication full of notes and articles of local value.—*A Concise Handbook of Garden Shrubs*, by B. M. Gwyn Lewis. (Methuen & Co.)—*A Text Book of Fungi*, by George Massee. (Duckworth & Co.)—*Woburn Experimental Fruit Farm*, sixth report, by the Duke of Bedford, K.G., and Spencer Pickering, F.R.S. (Eyre & Spottiswoode.)—*A Book of English Gardens*, by M. E. Gloag. Illustrated by K. M. Wyatt. (Methuen & Co.)

LAW NOTE.

FLORISTS AND THE FACTORY ACT.

At the Marylebone Police Court recently a case of importance to florists was decided by Mr. Paul Taylor. A florist, of Crawford Street, Marylebone, was summoned by Charles C. W. Hoare, a factory inspector, for contravening the Factory and Workshops Act by failing to affix an abstract of the Act in his workshop.

Mr. Muir, barrister, instructed by Mr. Freke Palmer, defended. The proceedings were in the nature of a test case, it having been an open point hitherto whether the work carried on in florists' shops brought those shops and the workers within the Factory Act. Evidence was given that the defendant company employed a number of young women permanently all the year round for the purposes of making up bouquets, wreaths, and floral decorations. This work, it was contended, brought the workers within the Act, but no abstract of the Act was exhibited in the workshop, and the company refused to exhibit it. Mr. Muir submitted, in defence, that the work done was not "manual labour" within the meaning of the Act, but required a highly artistic sense. He also contended that natural flowers adapted for sale in the form of bouquets, &c., did not come within the meaning of an "article," which was a thing that had been subject to manufacture. That being so, the company claimed that they were not subject to the Factory and Workshops Act, and for that reason they refused to exhibit the extract.

Mr. Paul Taylor referred to the fact that he had already held that the company's workshop did not come within the Act by reason of the work carried on there; but after going more fully into the matter, he said he was decidedly of opinion that it did not come within the Act, and the summons would therefore be dismissed.

THE FERNERY.

SOME CHOICE ASPLENIUMS.

It is twenty years since Messrs J. Hill & Sons, Edmonton, first took up the cultivation of Asplenium nidus, and one of the original plants was in the group exhibited at a recent meeting of the Royal Horticultural Society. Plants about two and a half to three years old find the most ready sale in the market, and these are contained in large 60-size pots. A. nidus has become one of the most popular market ferns, but few growers succeed so well

Fig. 107.—Asplenium l. ceratum.
(See text.)

with it as do Messrs. Hill & Son. When visiting the nursery some time ago I saw thousands of plants in various sizes from seedlings just germinated onwards to those in 5-inch pots.

Asplenium laceratum (see fig. 107), which was shown in the group already referred to, was awarded a First Class Certificate. At first sight it would appear to be a variety of A. nidus having thick fronds with a bright surface, but narrower, and cut down into irregular lobes, but instead of the leafy portion extending to the base, each frond has a black stripe about 3 inches long. It was introduced from Brazil, and may prove to be a distinct species or a natural variation of a known species. The descriptive name may be a little misleading, as there is a variety of A. præmorsum already named laceratum. The plant shown had fronds about 15 to 18 inches long, but, as with A. nidus, with age they may attain to much larger proportions. The nearest description of any Brazilian species I can find is that of A. serratum, which does not appear to be in cultivation; it is referred to in Hooker's *Species Filicum*.

Asplenium lucidum.—This is a useful Fern for market supply. In a small state it is very pretty, and one of the most serviceable. When fully developed it has pinnate fronds about 15 to 18 inches in length and about 6 inches in breadth; the fronds, which grow nearly erect, are of a thick, coriaceous texture, and will last almost as well as the leaves of an Aspidistra. It is of very slow growth. Some authorities consider the plant to be a variety of A. obtusatum, but as I have known them, they are very distinct in appearance.

Asplenium Mayi.—This appears to be of hybrid origin, and was raised by Mr. H. B. May, Edmonton; it was given a First Class Certificate in 1894. It is somewhat intermediate between A. pteridoides and A. Baptisti; it is of more lax growth than the above, and the deeply serrated pinnæ are narrower and longer. I saw this in large quantities when visiting Messrs. May & Sons' nurseries a short time ago; it appears to come true from spores. I may add that the fronds of this plant have the bright, deep-green surface, and are of good substance. A. Herbsti is another from the same parentage, with rather broader pinnæ and more erect fronds. A. Drueryi is another, with crested fronds, which distinctly shows its affinity to A. Baptisti. There are also several other distinct varieties of the same type. The one disadvantage is that they are of very slow growth, but once they attain to a useful size they keep in good character for many years. *A. H.*

HOME CORRESPONDENCE.

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

The Royal Gardens, Frogmore.—The completion of the work of improvement undertaken in the Royal gardens since the King ascended the throne is rapidly nearing completion; indeed, it is probable that ere the year closes the conversion will be completed. It is the King's wish that Frogmore, as a garden, shall be of the most perfect and complete description, and he has been enthusiastically supported by his Treasurer, Sir Dighton Probyn, who is an earnest and devoted gardener, and by Mr. McKellar, the gardener at Frogmore, who has, indeed, cause to look upon the results of his work with the greatest satisfaction. From Orchids and stove plants down through fruit houses and vineries, even to Tomatos, everything is in splendid condition. In one long span-roofed house are some 200 Tomato plants in 10-inch pots of the variety Veitch's Dwarf Red. The plants are standing in double rows on either side of the house, and their average height is 30 inches. So short-jointed and compact in habit are they that each plant is carrying in that short length of stem fully 6lb. of very handsome and particularly solid, rich-coloured fruits. The whole of these plants were raised from seed sown in June,

It would indeed be difficult to find an equal show of such perfectly-developed fruits on an equal number of such dwarf plants. Those readers of the *Gardeners' Chronicle* who, in spite of some recent correspondence, still seem to think that the days of successful outdoor Peach and Nectarine culture have passed, should next year endeavour to see the Peach wall at Frogmore, as that would demonstrate the fallacy of their belief. A wall in the Royal gardens of good height and 1,000 feet in length has three-year-old trees trained on it, and these trees now average 10 feet in breadth, and they are of a corresponding height. There are scores of these trees, and they are all in robust health, and they have generally this year fruited well. In another three years the wall promises to be so furnished that hardly a brick will be seen through the trees. The long border is now cropped, one half with Cauliflowers and the other half with Spinach. Perhaps the most remarkable sight of all in these gardens is the splendid herbaceous borders. Imagine a broad roadway, 15 to 16 feet in width and 1,000 feet in length, and on either side a border of the same great width, planted to the fullest extent with thousands of hardy plants, intermingled with which are a few tender plants and annuals. Lovers of hardy flowers would indeed revel in a sight of such beauty. *D.*

CHRYSANTHEMUM ELEANOR DUCHESS OF NORTHUMBERLAND.—This is a good, large, white variety. The only fault I can find with this variety is that it flowers too early. Flowers from first crown buds are now (October 2) at their best, the blooms being 25½ inches in circumference. I shall be glad to know if any grower has found it come good and large on second crown buds. It is certainly one of the best Chrysanthemums of recent introduction. *A. J. Long.*

POLYGONUM POLYSTACHUM.—Why is not this Himalayan Polygonum more frequently grown? It is both beautiful and sweetly scented, and most valuable at this season. *A. Kingsmell, The Hall, Hanwell Wood, October 3, 1906.* We agree with our correspondent as to the merits of this plant, and the fragrant flowers he has sent us are much appreciated. ED.

FRUIT GATHERING.—As the season advances the work in the fruit garden increases. The fruit has to be gathered, the late kinds to be stored for future use, and the soft (non-keeping) kinds prepared for immediate sale. Most of the late varieties of Apples are ready for gathering, and if wet weather sets in after the season of long drought, a large quantity will fall and have to be sold as wind-falls, and although "drops" always find a ready market at home, prices for them rule very low. We have been gathering Bramley's Seedling, and although the fruits are not such a fine sample as they were last season, they are a valuable asset both for home use and for marketing in the New Year. This Apple is a first-rate grower, a gem tree in the plantation, being sturdy and of symmetrical shape, developing with a minimum quantity of inside spray wood. It is certain to be a favourite variety as a good late Kitchen Apple for a long time to come. Lord Derby is another variety which as a rule crops heavily, and the fruit keeps well until December. The fruits are now ready to be gathered and will be stored. Late Apples are being gathered a trifle earlier this year. Blenheim Pippin is ready and must be got in. Cox's Orange Pippin is all harvested. Tom-tits have spoiled many of the fruits and wind caused quantities to fall. They will need a lot of attention while in store this year. Cox's Pomona were a good sample and sold well. Gascoyne's Scarlet Seedling, a lovely Apple, has been in a fortnight and will soon be fit for marketing, in fact they are quite ready now. Lane's Prince Albert and Allington Pippin are both still hanging on the trees, as is also Smart's Prince Arthur. The tree is not a first-class doer in a plantation, and it requires much room, is loose and fine in growth, but produces fine, late keeping Apples. Wellingtons are small and are all picked. Pears are hanging well, but they will require a lot of attention in keeping. Tom-tits have been a great plague among these fruits, but they will have their numbers thinned during the winter shooting. The time for pruning operations is at hand. Raspberries are cleaned ready to cut, and many of the Gooseberry bushes are finished. Black and Red Currants will be the next to receive attention, and those behind follow the manure and diggers. *H. B., Maidstone, October 5, 1906.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 9.—The ordinary fortnightly meeting of the Committees took place on Tuesday last in the Society's Hall, Vincent Square, Westminster.

Orchids were shown in considerable numbers, and the ORCHID COMMITTEE recommended two First-Class Certificates and five Awards of Merit to novelties.

The FLORAL COMMITTEE recommended one First-Class Certificate and four Awards of Merit.

The FRUIT & VEGETABLE COMMITTEE recommended an Award of Merit to a variety of Potato.

In the matter of display the chief features were those of Dahlias, tuberous-rooted Begonias, early-flowering Chrysanthemums, and even Roses, all from the open garden, proving that very little frost has yet been experienced. But growers realise that we are now in the danger zone, and a scene of more or less destruction may greet them on some morning when they least expect it.

In the afternoon a lecture on "The Origin and Peculiarities of Climbing Plants" was delivered by the Rev. Prof. Geo. Henslow.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. T. W. Turner, Jno. Green, Chas. E. Pearson, H. B. May, James Walker, C. T. Druery, R. W. Wallace, W. Howe, J. Jennings, H. J. Cutbush, C. Blick, C. Jeffries, W. Bain, Chas. Dixon, E. T. Cook, R. C. R. Neville, J. T. Bennett-Poë, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, Geo. Paul, Wm. Cuthbertson, Ed. Mawley, and R. Hooper Pearson.

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, showed a very complete collection of Davallias, Polypodiums, and Nephrolepis. The exhibit was of very large proportions, and it was probably the best group of Ferns the Hall has up to the present contained. Twenty-four species and varieties of Nephrolepis, 60 of Polypodiums, and 40 of Davallias found a place in the group, and these numbers will convey some knowledge of the importance of the exhibit. We can only enumerate a few of the very choicest, such as Polypodium lepidopteris sepultum, the tall P. aureum giganteum, the drooping P. rigidulum, P. aureum Mayii, P. Dryopteris, &c. Then of Davallias there were seen such gems as D. parvula alpina, D. tenuifolia Veitchii a magnificent plant, D. epiphylla, D. polyantha (the younger fronds being tinted red). The Nephrolepis were represented by the graceful N. Piersonii, N. Fosteri (a very fine specimen), N. davallioides furcans, N. crispata congesta, &c. (Gold Medal.)

Mr. L. R. RUSSELL, Richmond, Surrey, showed a collection of Ivies, principally in the arborescent form. Golden and silver-leaved varieties were freely represented, one of the best of the latter type being Hedera arborea elegantissima. A common variety is Hedera arborea Russelliana, the growths being fastigiated, and the foliage arranged alternately and in a most regular manner. H. a. angularis aurea, H. a. lati-maculata, H. a. digitata aurea, and H. grandis are among the more handsome varieties shown. (Silver Banksian Medal.)

MESSRS. THOS. ROCHFORD & SONS, Turnford Hall Nurseries, near Broxbourne, Herts, showed a magnificent group of Codiæums (Crotons). The colouring in the foliage of the various varieties was remarkable, and, in addition, the plants were clean, well furnished with leaves at their bases, and altogether they showed excellent culture. The variety turnfordiensis has a ground-work of gold colour, and this is bordered by a broad band of deepest green. Some grand specimens of C. Reidii are deserving of especial mention. Messrs. ROCHFORD also showed a number of Nephroleps, these plants also being in splendid form. (Silver-Gilt Flora Medal.)

Mr. J. BRUCKHAUS, Twickenham, staged a bright collection of Codiæums (Crotons) in most of the best decorative varieties. The plants were in small pots, and they were well furnished with their showy foliage to the surface of the potting medium. A row of Pandanus Veitchii formed a suitable finish to the group. (Bronze Flora Medal.)

Messrs. WM. BULL & SONS, King's Road, Chelsea, showed a dozen plants of the beautiful Dracæna Victoria.

Mr. GEORGE PRINCE, the Oxford Rose Nurseries, Longworth, Berks, showed an excellent group of Roses, Rose-hips, and Rose foliage. The Roses were very bright, and of very good quality considering the lateness of the season. The display of foliage was interesting, and showed the great diversity of form that exists between the several species: R. rubrifolia has very dark-coloured leaves, R. sinica has very broad leaf segments. The centre of the exhibit was occupied by a number of blooms of Frau Karl Druschki and the pink-coloured Amadis. (Silver-Gilt Banksian Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, N., showed plants and cut flowers of Carnations, Ericas, Statice profusa, Chironia ixifera, Bouvardias, &c. (Silver Banksian Medal.)

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, showed a large number of Bouvardias in many varieties: Veronica Andersoni with white, red, and blue flowers, and interspersed among the flowering plants a number of hardy Ferns. Bouvardia President Garfield is a double-flowered variety of a soft rose shade; the variety Vulcan is of beautiful scarlet colour. (Silver Banksian Medal.)

Miss WILLMOTT, Warley Place, Great Warley (gr. Mr. J. Orton), showed a batch of hybrid Nerines of much merit. The colours of some of the flowers were charming, especially those of soft shades of pink, &c.

Mr. ROBERT BOLTON, Warnton, Carnforth, set up a number of vases of Sweet Peas of some of the newer varieties.

Messrs. HOBBIES, LTD., Dereham Nurseries, Norfolk, displayed a very large number of Cactus Dahlias, and some good garden Roses. (Silver-Gilt Banksian Medal.)

Messrs. CARTER PAGE & Co., 52 and 53, London Wall, London, E.C., showed some good Cactus and other Dahlias. Adjoining these flowers was a beautiful display of border Chrysanthemums—the variety Horace Martin (yellow) was exceptionally fine. (Silver Banksian Medal.)

Messrs. CHEAL & SONS, Crawley, Sussex, staged single, Cactus, and Pompon Dahlias, sprays of coloured foliage and branches with berries of shrubs and trees. The charming colours seen in such subjects as Quercus coccinea, Acer erioearpum, Liquidambar, &c., were much admired. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited Dahlias extensively. The flowers were chiefly of the Cactus type, but some of the broad floret kind were noticed, and some of these appeared to possess considerable merit. One labelled Mad. Van der Dael is very pretty, the florets are suffused and tipped with pink on a white ground; Yellow Colosse is another good flower. Mad. A. Lumière is an attractive flower of this type, the white florets are flushed with red. Messrs. CANNELL also exhibited a pink form of Anemone japonica. (Silver Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, showed a number of choice border flowers. Spikes of Cimicifuga simplex were very handsome. Asters, Rudbeckias, Sunflowers and other Composites formed the principal subjects in the exhibit.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., arranged an exhibit of seasonable hardy flowers in a highly decorative manner, the group being exceedingly pretty. The principal subjects were border Asters, and of these a very complete collection was staged; Pentstemons, Sunflowers, Chrysanthemums, Physalis Franchetti, &c., were also included. On an adjoining table the same firm arranged vases of winter-flowering Carnations, and baskets of the dwarf Polyantha Rose Mrs. W. H. Cutbush. (Silver-Gilt Banksian Medal.)

Mr. FRANK BRAZIER, Caterham Hardy Plant Nursery, Caterham, Surrey, staged a very large group of hardy plants—Chrysanthemums, Dahlias, Phloxes, and other border flowers. (Silver Banksian Medal.)

Messrs. J. PEED & SONS, West Norwood, staged a beautiful array of tuberous rooting Begonias in single and double-flowered varieties. Adjoining the Begonias were many pans of Alpine and rock-garden plants, including many succulents. (Silver Banksian Medal.)

Mr. Eric F. Such, Royal Berkshire Nurseries, Maidenhead, staged an extensive display of Chrysanthemums, principally of the border and Pompon types. Nellie Blake (red) and Murillo (pink) are two decorative kinds that were shown well by Mr. Such.

Messrs. Cragg, Harrison & Cragg, Merrivale Nurseries, Heston, Middlesex, put up a very large exhibit of Chrysanthemums from the open. The collection included all the best border kinds, and also varieties suitable for market purposes. Crimson Pride, King of the Earlies (white), Etoile d'Or, and Soleil d'Octobre (yellow) are good varieties of the large flowered market type. The display also included flowers and plants of the decorative and Pompon types. Perennial Asters interspersed among the Chrysanthemums added further beauty to the group. The same firm also displayed a good strain of Pansies, such as are sold largely in the spring for bedding purposes, and an interesting collection of Cactaceous plants. (Silver Flora Medal.)

Mr. G. Reuthe, Hardy Plant Nursery, Keston, showed many of the best varieties of perennial Asters, and other hardy flowers.

Mr. R. C. Notcutt, Woodbridge, Suffolk, showed a seasonable assortment of hardy flowers, among which the long, drooping sprays of Desmodium penduliflorum were conspicuous objects. (Bronze Flora Medal.)

Miss M. H. Day, Guildford (gr. Mr. R. Sinnard), displayed a dozen vases of border Chrysanthemums.

Mr. H. J. Jones, Ryecroft Nurseries, Lewisham, exhibited his new Chrysanthemum Tapis de Neige, and another white variety named Moneymaker.

Messrs W. Wells & Co., Merstham, Surrey, had most of the best varieties among border Chrysanthemums—Polly (bronze) and Lille (pink) are two desirable kinds. A few of the larger-flowering Japanese kinds such as Mrs. A. T. Miller, Miss Elsie Fulton (white), A. L. Stevens (yellow), and Amy Laidman (a new white flower) were also displayed by this firm. (Silver Banksian Medal.)

AWARDS.

Carnation Mrs. Robert Norman.—A pure white, winter-flowering Carnation, with slightly fringed petals, and possessing a moderate degree of fragrance. The Committee considered the variety to be better than that known as Lady Bountiful. Shown by Messrs. W. Cutbush & Sons. (Award of Merit.)

Colchicum Bivonae.—This, as shown growing in a pan, is a very strong-habited Colchicum, with sufficiently strong flower stems to hold the blooms in a perfectly erect position. The flowers are of very large size, possess much substance in the segments, and the colour is of an unusually rich shade of purple, becoming whitish towards the centre of the flower. From Messrs. Barr & Sons. (Award of Merit.)

Nephrolepis Todeaoides.—There have been many new Nephrolepis shown during the past year or two, but we think this one will be appreciated with the best of them. Its name very well describes the appearance of the fronds, the older ones especially being so plumose, so divided, and yet so overlapping as to resemble the beautiful fronds of Todea superba. Shown by Messrs. Thomas Rochford & Sons. (First Class Certificate.)

Nerine "Crimson King."—A very large flowered variety, with broad, recurved, slightly-twisted segments of brilliant crimson colour. Shown by Mr. H. Elliott, Hassocks Nursery, Sussex.

Rose Nellie Johnstone.—A pretty tea-scented variety, with moderately-sized flowers of good form as a bud, and possessing a very attractive shade of pink colour. It was raised by the exhibitors, probably from the varieties Madame Berkeley and Catherine Mermet. The committee welcomed the variety as a good autumn bloomer and pure "Tea." From Messrs. Paul & Sons, The Old Nurseries, Cheshunt. (Award of Merit.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, H. Little, W. Cobb, J. Colman, Francis Wellesley, R. G. Thwaites, A. A. McBean, J. Wilson Potter, H. T. Pitt, J. Charlesworth, A. Dye, H. G. Alexander, W. H. Young, W. H. White, G. F. Moore, J. W. Odell, W. Bolton, C. J. Lucas, and W. Boxall.

Messrs. Sander & Sons, St. Albans, staged a good group, for which a Silver Flora Medal was awarded. Cattleya bellatula (Warscewiczii × Iris) was a pretty novelty, in which the shape and colours of the flower follows C. Warscewiczii closely, but the labellum is trumpet-shaped. Several good forms of Cattleya Hardyana, including the handsome variety augusta, C. Ella, C. Pittiana, C. Boadicea, Brasso-Cattleya heatonensis, and other good hybrids, including the handsome Odontoglossum amabile Bella, which has clear white flowers handsomely blotched with claret-purple, were noted; and among species and varieties, Vanda Sanderiana, Cattleya Gaskelliana alba, C. Warscewiczii Sanderiana, Miltonia vexillaria Lawrenceana, with a very distinct dark crimson mask at the base of the lip, &c.

Messrs. Heath & Sons, Cheltenham, staged a very effective group, composed mainly of Dendrobium Phalænopsis, with a few of the allied D. Statterianum, and nicely-flowered examples of D. formosum, at one end being a selection of Cypripediums, &c. (Silver Banksian Medal.)

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), arranged an interesting group in the centre of which was a specimen of Oncidium ornithorhynchum album with several spikes. Other interesting species were Pleurothallis lateritia, Stelis pubescens, Lælia Dayana delicata, Phalænopsis violacea, and Cypripedium Godefroyæ leucochilum. Of hybrids noted were Cattleya Mrs. J. W. Whiteley, Lælio-Cattleya Parysatis, L.-C. Perrensa (L. Perrinii × C. granulosa), and L.-C. tene-Gottoiana (L. tenebrosa × L.-C. Gottoiana). (Silver Banksian Medal.)

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury, showed a very beautiful light-coloured form of Cattleya Hardyana with six flowers on one spike and four on the other. The plant, which was in robust health, had been grown from a very poor specimen. A Cultural Commendation was voted to Mr. H. G. Alexander (Orchid grower at Westonbirt). Major Holford also showed the curious Brasso-Cattleya Digbyano-Forbesii, with greenish flowers slightly marked with purple.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cattleya Mantinii The Premier, with large and finely-formed bright rose flowers with rich ruby lip having gold lines at the base, and Cattleya Mrs. Frederick Knollys (granulosa Buyssoniana × C. Bowringiana), a neat and pretty hybrid of novel shape. The flowers, which are of thick texture, have flatly-arranged sepals and petals of rose-purple colour. The labellum, which is closely folded over the column at the base, is white in that portion. The broadly ovate front lobe is purple with a white, slightly-fringed margin and a few purple lines on light ground at the base.

Jeremiah Colman, Gatton Park (gr. W. P. Bound), showed three new hybrids, viz., Cattleya McMasterae (Schilleriana × Mendelii), a large reconstituted flower of good substance, the extended labellum being white at the base, the isthmus yellow, and the front rose-purple; Lælio-Cattleya Goodyii (C. Wendlandiana × L.-C. Clive var. broomfieldiensis), and which has the shape of C. Mantinii, the rich dark rose flowers having an intensely dark ruby-claret lip with gold veining at the base, &c.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), sent Cypripedium H. S. Goodson (Swinburnei × T. B. Haywood), a good large flower; Cattleya Gossensiana, and a very fine form of C. Wendlandii.

Messrs. Stanley & Co., Southgate, showed Miltonia Binotii var. Harrisii, with broad segments closely barred with light-brown, and finely displayed violet-purple labellum.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent Odontoglossum Una (crispum × nevadense) rosefieldiense. The flowers are white, with very distinct blotching of brown colour on the sepals and petals, the bases and tips of which are white, and on the basal half of the fringed labellum. Miltonia Bluntii rosefieldiensis, a very fine form, &c.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, arranged a small group, in which were Cypripedium highfieldense, Low's variety (Lawrenceana × Diurne), with greenish-yellow flower having some purplish markings; C. Niobe, Westonbirt variety, C. Juno, Cattleya St. Gilles, and other hybrids.

E. Roberts, Esq., Park Lodge, Eltham (gr. Mr. Carr), showed Cypripedium Bingleyense superbum, a large and richly-coloured flower.

A. Huth, Esq., Oakley House, Putney (gr. Mr. Fisher), showed a splendid specimen of Odontoglossum grande with five spikes, bearing together twenty-three flowers, and for which a Cultural Commendation was given.

AWARDS.

First-Class Certificate.

Cymbidium erythrostylum, from J. Gurney Fowler, Esq. (gr. Mr. J. Davis), and J. Bradshaw, Esq. (gr. Mr. Whitelegge). A very beautiful new species of the C. eburneum class, introduced from Annam by Messrs. Sander & Sons, and now exhibited for the first time, although it was described from Glasnevin last year. The foliage is very graceful and the flowers, which are produced on arching spikes, resemble in some respects those of C. eburneum, but are borne from three to seven on a spike, the fine specimen shown by J. Gurney Fowler, Esq., having two spikes of five flowers each, one of six, and one of seven. The broad sepals are white with a slight blush tint and some light rose spots at the base. The petals are extended over the column, and are similar in colour to the sepals. The three-lobed lip, in which the front lobe is short, is yellowish, closely lined with red purple, and the column is bright crimson.

Cattleya Mrs. J. W. Whiteley, Rosslyn variety (Bowringiana × Hardyana), from H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood). A very handsome, large, and finely-coloured variety. Sepals and petals of a bright magenta-rose colour, lip dark ruby-crimson with gold lines at the base. The plant bore one spike of 16 flowers.

Award of Merit.

Lælia Cattleya Phryne, Gatton Park variety (L. xanthina × C. Warscewiczii), from Jeremiah Colman, Esq., Gatton Park (gr. Mr. W. P. Bound). One of the best of the L. xanthina crosses. Flowers of good shape. Sepals and petals light canary-yellow; front of the lip dark rose; disc yellow.

Miltonia Clowesii rosefieldiensis, from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables). A very large and well-marked variety. Sepals and petals Indian yellow, with broad chestnut-brown bands; lip tinged with lilac at the base, changing to white on the broadly-expanded front lobe.

Cattleya Hardyana Our Queen, from Messrs. Thos. Rochford & Sons, Turnford, Cheshunt. A remarkable variety with cream-white sepals and petals, and claret-purple lip with fine gold veining from the base.

Lælia Cattleya G. G. Whitelegge (L.-C. callistoglossa × C. Hardyana), from J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge). A very handsome hybrid and one of the best Lælio-Cattleyas. Flowers large, sepals and petals white tinged with lilac, the broad and finely expanded lip dark claret purple, with only some fine orange coloured lines at the base, and a narrow lavender-coloured margin.

Cattleya Pittiana, Low's variety (Schofieldiana × Dowiana aurea), from Messrs. Hugh Low & Co. A remarkable variation of rich and peculiar colour, the sepals and petals being rosy-red with an orange shade, and the lips also finely coloured.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), and Messrs. Jos. Cheal, A. R. Allan, W. Bates, S. Mortimer, Alex. Dean, W. Pope, R. Lye, H. Parr, H. J. Wright, J. Davis, Geo. Kelf, G. Reynolds, P. D. Tuckett, J. McIndoe, and H. Somers Rivers.

Mr. J. A. Nix, Tilgate, Crawley, Sussex, staged a group of fruits, principally Apples and Pears, of first-class quality. A few bunches of Grapes and two Melons were included. The Apples, both dessert and culinary varieties, were remarkably fine produce, some of the best "dishes" being Royal Jubilee, Lane's Prince Albert, Golden Noble, Lord Derby, Peasgood's Nonsuch, Tower of Glamis, Mère de Ménage; and among dessert varieties Allington Pippin, Cox's Orange Pippin, Cornish Gilliflower, Dutch Mignonne, Mother, Charles Ross, &c. The Pears were also of good quality, but many, of course, were unripe. (Hogg Memorial Medal.)

Mr. R. W. Green, Wisbech, Lincolnshire, showed a very comprehensive collection of Potatos. All the more prominent and newer varieties were exhibited in clean-skinned, well-matched samples. (Silver-Gilt Knightian Medal.)

Mr. R. Comyns, Heath Farm, Watford, showed some very large bulbs of Ailsa Craig Onions. (Silver Knightian Medal.)

Some excellent bulbs of Onion Ailsa Craig, weighing between 2lbs and 3lbs each, were shown from Lady WANTAGE's garden at Lockinge, Berkshire.

AWARD OF MERIT

Potato Dr Gillespie.—This variety was recommended an Award of Merit after the Committee had tasted in a cooked condition some tubers that had been grown in the Society's gardens at Wisley. From Messrs BARR & SONS

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 9.—The twentieth anniversary dinner of this society was held on Tuesday last in the Royal Venetian Chamber, Holborn Restaurant, when about 90 members and friends assembled. The chair was occupied on this occasion by J. Gurney Fowler, Esq., treasurer of the Royal Horticultural Society.

After the usual loyal toasts had been proposed, the Chairman gave the principal toast of the evening, that of "The United Horticultural Benefit and Provident Society." Mr. Fowler, as is well known from his successful treasurership of the premier horticultural society, is quite at home among matters financial, and at the commencement of his remarks he plunged into the subject of figures. He had, he observed, been looking into the accounts of the society, and had compared its position 25 years ago with that of the present day. The advance the society had made is wonderful. The funds, tested by standard tables upon which friendly societies are usually judged, show a remarkably healthy condition. Whereas the average amount which these tables would credit to a society of such proportions as the United Horticultural Benefit and Provident Society as sick allowance for five years is £3,590, the sum actually paid has only amounted to £1,531. This condition undoubtedly points to the healthy nature of the gardener's calling. He regretted there was not a life assurance scheme connected with the association, for he believed such a scheme would be equally successful as the other policy of the society had been. He might mention, however, that, as the Government require a deposit of £20,000 before a society can operate life assurances, it would have to be done through some other society, but that would cause no difficulty, for he knew a friend who would willingly insure in a body the first 1,000 persons who passed his office door, and in the case of a society whose members have such a healthy occupation as gardening he would do so with pleasure. He wished the society every success, and expressed his pleasure at being with them on this occasion. Mr James Hudson, who replied, thanked the Chairman for his kind remarks and for his suggestion on the question of life assurance. He himself was strongly in favour of it, and he promised it should receive the careful consideration of the management committee. The society was to be congratulated on the health of the members, and it was only second to the clerical associations in the longevity of its members. The society has been existent for 40 years, and, although progress was slow at the first, it was now secure, but he appealed for increased membership, and urged each member to obtain one new member during the coming year. The invested funds of the society now amount to £28,000, which gives an average of £23 to each member. The institution was in no sense a charity, and their only object was brotherhood. The toast of "The Honorary and Life Members" was proposed by Mr. Thos. Winter, and responded to by Mr. Arthur Hennig. Mr. Wm. Marshall proposed the toast of "The Chairman," and other toasts included that of "The Visitors," proposed by Mr. E. F. Hawes, and responded to by Mr. Alex. Dean, and "The Press," proposed by Mr. W. Woods, and responded to by Mr. J. Harrison Dick.

The musical part of the programme was again carried out by the Kew Glee Singers.

BIRMINGHAM AND MIDLAND COUNTIES' GARDENERS' MUTUAL IMPROVEMENT.

OCTOBER 3, 4.—An exhibition of early-flowering Chrysanthemums and Dahlias was held at the Botanical Gardens, Edgbaston, on these dates, under the auspices of this society. The honorary exhibits were a great feature of the show. The weather, unfortunately, was wet, and the attendance was, in consequence, below the average.

COMPETITIVE CLASSES.

There were three exhibitors in a class for a group of Chrysanthemums cut from the open and arranged for effect in a space measuring 12 feet by 6 feet. Messrs. GUNN & SONS, Olton, were awarded the 1st prize for a tastefully-arranged exhibit; 2nd, Mr. C. H. HERBERT; 3rd, Mr. A. W. THORPE, Birmingham Road, Lichfield.

In a class for six vases of yellow Chrysanthemums, three sprays to each vase, Mr. C. H. HERBERT won with the variety Horace Martin; 2nd, Mr. C. WALL.

Mr. C. H. HERBERT also won in a similar class for the variety Goacher's Crimson; 2nd, Mr. R. USHER; 3rd, Mr. C. WALL.

Mr HERBERT also staged the best six vases of a white Chrysanthemum, having the variety Roi-des-Blancs, and the best six vases of Chrysanthemums of any colour.

Several classes were open to members of the association only, and in this section Mr. J. SCEANEY was placed 1st for a group of Chrysanthemums arranged for effect, and occupying a space measuring 6 feet by 4 feet.

In classes for three vases of Chrysanthemums of especial colours Mr. J. JEANS won with a crimson-coloured variety, and for yellow and white varieties; and Mr. J. SCEANEY for three vases containing flowers of any other colour than those mentioned.

The best six vases of Pompom Chrysanthemums were staged by Mr. R. USHER, and he was followed by Mr. J. SCEANEY.

Competition in the Dahlia classes was very poor, owing, no doubt, to the frosts of the preceding week. Messrs. PEMBERTON & SONS, Bloxwich, were awarded the 1st prize for a nicely-arranged group of Cactus Dahlias occupying a space 10 feet by 3 feet, and the same firm were also 1st for a collection occupying a space measuring 6 feet by 3 feet

HONORARY EXHIBITS.

Messrs. BAKERS, Wolverhampton, put up a magnificent exhibit of Chrysanthemums and Dahlias that occupied a space of 54 feet by 4 feet. (Gold Medal.)

Messrs. SIMPSON & SONS, Birmingham, arranged a very fine exhibit of Chrysanthemums. (Silver Medal.)

Messrs. IVIEY & SONS, Droitwich, put up a nice exhibit of Chrysanthemums and Asters. (Bronze Medal.)

Messrs. GUNN & SONS, Olton, showed hardy flowers and Violas. Mr. C. H. HERBERT, Acocks Green, also showed border flowers.

Mr. E. BURDEN, King's Heath, staged an exhibit of local-grown Apples. Mr. J. UPAGE, the Experimental Gardens, Droitwich, displayed dishes of Apples and Pears.

GARDENERS' DEBATING SOCIETIES.

CROYDON AND DISTRICT HORTICULTURAL.—Mr. W. J. Pritchard (District), one of the staff from the gardens of Addiscombe House, was the reader of a paper on "Vegetables for Exhibition," illustrated with lantern views. Whether vegetables are grown for exhibition or for general use, it behoves the gardener to do his utmost to produce the best. The preparation of the ground and location of crops were well expounded, for these play an all-important part in producing those attractive specimens. Many are the variety of vegetables one may grow, but in the short time at his disposal the lecturer was obliged to treat of the kinds most useful, and in doing so he explained the time of seed-sowing, transplanting, and general cultivation under each heading. Some of the varieties under observation were Leeks, Celery, Cauliflowers, Onions, Carrots, Parsnips, Beet, Brussel Sprouts, Potatos, Peas, Beans, Turnips, &c. Preparing specimens for the exhibition board also received attention, and useful hints on this were much appreciated. There was a good display of exhibits.

ACOCKS GREEN AMATEUR VEGETABLE.—This society held their third annual show at the Old Manor House, Acocks Green. The classes were well filled and generally, the exhibition showed a marked improvement upon the previous ones. A Gourd exhibited weighed 58 lbs. 8 ounces, and a second fruit 57 lbs. 4 ounces.

REDHILL, REIGATE AND DISTRICT GARDENERS'. A meeting of the above society was held on Tuesday, October 2; Mr. W. P. Bound in the chair. Mr. F. Phillips, of Craigendown Gardens, Reigate, gave a lecture on "The Cultivation of Fruits Under Glass." Peaches, Pears, Plums and Figs were all dealt with. Mr. Phillips gave details for the formation of the border, and the proper material for their construction. He also dealt with the questions of Varieties, Planting, Pruning, Thinning, Disbudding, Training and Watering. A discussion followed the lecture. *Frank C. Legge.*

MARKETS.

COVENT GARDEN, October 10.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Asters, per dozen bunches	1 6	2 6
Bouvardia, per dz. bunches	4 0	6 0
Calla æthiopica, per dozen	2 6	4 0
Centaurea cyanus, doz. bunches	1 0	2 0
— suaveolens	3 0	4 0
Coreopsis grandiflora, per doz. bunches	1 6	2 0
Carnations, per dozen blooms, best American various	2 0	4 0
— smaller, per doz. bunches	1 0	2 6
— Malmaisons	3 0	8 0
Cattleyas, per doz. blooms	9 0	12 0
Chrysanthemums, per dz. blooms	1 0	2 6
— small blooms, per doz. bnchs.	3 0	6 0
Dahlias, per dozen bunches	2 0	3 0
Eucharis grandiflora, per doz. blooms	3 0	4 0
Gardenias, per doz. blooms	1 6	2 6
Gladiolus, various, per dz. bnchs.	9 0	12 0
— brenchleyensis, per doz. spikes	1 0	2 0
Gypsophila elegans, per doz. bunches	2 0	3 0
paniculata	2 6	4 0
Gaillardias	2 0	3 0
Heather, white, p. doz. bunches	3 0	6 0
purple	2 0	3 0
Lilac, white, per bunch	2 0	3 0
Lilium auratum	2 0	3 0
— candidum, per bunch	2 0	3 0
— lancifolium, rubrum and album	1 6	2 0
— tigrinum, per bunch	2 0	3 0
Lilium longiflorum	3 0	5 0
Lily of the Valley, p. dz. bunches	5 0	8 0
— extra quality	9 0	12 0
Marguerites, white, p. dz. bunches	2 0	3 0
— yellow, per dz. bunches	2 0	3 0
Mignonette, per dz. bunches	2 0	3 0
Montbretia, dozen	2 0	3 0
Odontoglossum crispum, per dozen blooms	2 6	3 0
Pancratiums, doz. fls	2 0	3 0
Pelargoniums, show, per doz. bunches	3 0	5 0
— Zonal, double scarlet	3 0	4 0
Pyrethrums, dozen bunches	1 6	2 6
Roses, 12 blooms, Niphetos	1 0	2 0
— Bridesmaid	1 0	1 6
— Kaiserin A. Victoria	1 0	2 0
— Caroline Testout	1 0	2 0
— C. Mermet	1 6	2 6
— General Jacqueminot	1 0	1 6
— in bunches, per dozen	3 0	5 0
— Liberty	1 0	2 0
— Mad. Chatenay	1 0	2 6
— Mrs. J. Laing	1 0	2 6
— from the open, various kinds, per dz. bnchs.	3 0	5 0
Scabiosa, per doz. bunches	2 0	3 0
Statice, per dozen bunches	4 0	6 0
Stephanotis, per dozen trusses	3 0	5 0
Stocks (double white) per doz. bunches	2 0	4 0
Tuberoses, per dz. blooms	0 4	0 6
Violets, per dozen bunches	1 6	3 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis leaves, p. dz. bunches	1 6	2 0
Asparagus plumosus, long trails, per doz.	1 0	8 0
— — medium, bunch	1 6	2 0
— — shoots sprays per bunch	0 6	0 9
— Sprengeri	0 6	1 0
Adiantum cuneatum, doz bun	1 0	6 0
Perleens, p bunch	2 6	3 0
Croton leaves, per bunch	1 0	1 6
Cycas leaves, each	1 6	2 0
Fern, English, p. dozen bunches	1 0	2 0
Ferns (French), dz. bunches	2 0	5 0
Hardy foliage (various), per dozen bunches	2 0	3 0
Hardy Grasses, per doz. bunches	2 0	3 0
Ivy-leaves, bronze	1 6	2 0
— long trails per bundle	1 0	2 0
— short green, doz. bunches	2 0	3 0
Moss, per gross	5 0	6 0
Myrtle, per dozen bunches	2 0	5 0
Pernettya, with berries, per bunch	0 3	1 0
Smilax, p. dz. trails	2 0	5 0

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

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, per dozen	4 0	6 0
— larger	9 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	18 0	30 0
— variegated, per dozen	30 0	42 0
Asparagus plumosus nanus, doz.	6 0	9 0
— Sprengeri, doz	6 0	8 0
— tenuissimus per dozen	8 0	10 0
Asters, per dozen	3 0	6 0
Bouvardias, per dz.	6 0	8 0
Chrysanthemums, best, per doz.	12 0	21 0
— smaller, per doz.	5 0	8 0
Clematis, per doz. in flower	8 0	9 0
Cocos Weddelliana, per dozen	9 0	12 0
Coleus	3 0	18 0
Crotons, per dozen	5 0	9 0
Cyperus alternifolius, dozen	12 0	30 0
— laxus, per doz	4 0	5 0
Dracænas, per doz.	4 0	5 0
Erica hyemalis, per dozen	9 0	21 0
— gracilis, p. dz.	15 0	18 0
— nivalis	12 0	18 0
Fuchsia japonica	18 0	24 0
Euonymus, per dz.	12 0	15 0
Ferns, in thumbs, per 100	4 0	9 0
— in small and large 60's	7 0	10 0
— in 48's, per dozen	16 0	25 0
— in 32's, per dozen	4 0	10 0
Ficus elastica, per dozen	10 0	18 0
— repens, per doz.	9 0	18 0
Fuchsias, per doz.	4 0	6 0
Hydrangea paniculata, per dozen	4 0	6 0
Kentia Belmoreana, per dozen	9 0	12 0
— Forsterana, per dozen	12 0	18 0
Latania borbonica, per dozen	12 0	21 0
Lilium auratum	12 0	18 0
— longiflorum, per dozen	18 0	24 0
— lancifolium, per dozen	12 0	18 0

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

	s.d.	s.d.
Lily of the Valley, per dozen ..	18 0	30 0
Marguerites, white, per dozen ...	4 0	8 0
Pelargoniums, Zonals, pr. dz.	3 0	5 0
Physalis Franchetti, each ...	1 6	3 6
Roses, per dozen ..	12 0	18 0

	s.d.	s.d.
Selaginella, dozen	4 0	6 0
Solanum capsicastrum, per doz.	8 0	12 0
Spiræa japonica, per dozen	6 0	10 0
Verbena MissWillmott, per doz..	4 0	6 0
Veronicas, per doz.	3 0	6 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples, Nova Scotian:		
— Gravensteins, per barrel ..	14 0	17 6
— Blenheims, per barrel	16 0	17 6
— Emperors, per barrel ..	16 0	—
— Ribstons, per barrel	16 6	—
— English, ½ bus.	1 9	4 0
— English, per bushel (46 lbs. to 50 lbs.) ...	3 6	6 6
— Newtown Pippins, per case	8 6	11 6
Bananas, bunch:		
— West Indian, red	3 0	5 0
— No. 1 quality...	7 0	—
— No. 2 quality...	5 0	6 0
— Extra quality...	8 0	8 6
— Giants... ...	9 6	15 0
— Jamaica ...	4 6	6 0
— Loose, per dz.	0 8	1 3
Blackberries, peck	2 0	2 6
Cranberries, per case	11 0	11 6
Damsons, ½ sieve	6 0	7 6
Figs, per dozen ..	1 0	1 3
— Italian, box ...	0 6	1 0
— French, p. box	0 9	1 2
Granadillas, dozen	2 0	2 6
Grape Fruit, case	9 0	12 0
Grapes (English), — Alnwick Seedling, per lb. ...	0 8	0 10
— Gros Maroc, per lb.	1 0	—
— Black Hambro, per lb.	0 6	1 3
— Alicante, p. lb.	0 6	1 0
— Gros Colmar, per lb. ...	0 9	1 6
— Muscat, per lb.	1 0	3 0
— Lisbon, cases..	8 6	9 0

	s.d.	s.d.
Grapes (Almeria), barrels... ..	8 0	12 0
Lemons:		
— Messina, case	9 0	17 6
— Naples, p. case	22 0	40 0
Lychees, per box .	1 0	1 2
Melons, each .	1 0	2 6
— Valencia, case	9 6	12 0
— Rock	1 6	2 6
Mangos	4 0	8 0
Nuts, Cobnuts, per doz. lb .	1 6	5 0
— Brazils, new, per cwt.	45 0	—
— Barcelona, per bag ...	24 6	—
— Walnuts, per bag ..	20 0	—
— per Grenoble bags	5 6	6 0
— Cocoa nuts, 100	10 6	13 6
Oranges, per case:		
— Jamaica ...	8 6	12 0
Peaches (English), per dozen .	6 0	15 0
— French, boxes	1 0	2 0
— Persimmons, p. box	1 0	2 0
Pears (English), ½ sieve	2 0	4 6
— English, per bushel (56 lbs.)	1 0	3 0
— American, barrels	20 0	25 0
— French, Williams, boxes ..	7 0	7 6
— French, Williams, crates ..	7 0	9 6
— Californian, pr. case	8 0	13 6
Pineapples, each ..	2 6	3 3
Plums (English), ½ sieve (28 lbs.)	7 0	8 0
— French, box ...	0 8	1 3
— French, ½ sieve	3 0	
— Californian, boxes	6 0	9 0

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen ...	2 9	—
Aubergines, per dz.	1 0	—
Beans, home-grown, p. bushel (40 lbs.) ...	6 0	—
Beetroot, bushel ..	1 6	—
Brussels Sprouts, per ½ bushel ..	1 0	3 0
Cabbages, per mat	2 0	2 6
— red, per dozen	2 0	—
Carrots, French pad	3 0	—
— per bag, unwashed ...	2 0	—
— washed ...	3 0	—
Cauliflowers, per tally	6 0	—
Celery	0 10	—
Chow Chow, p. dz.	1 6	2 0
Cucumbers, p. flat, 2½ dozen ...	6 0	6 6
— 3 dozen, small	5 0	6 0
— per dozen ...	2 0	3 0
Endive, per dozen	0 9	1 0
Horseradish, foreign, per dozen bundles ...	18 0	—
Leeks, 12 bundles	2 6	—
Lettuces (French), per dozen ...	1 9	—
Marrows, per tally	6 0	9 0
Mint, per dozen ...	2 0	—

	d.	s.d.
Mushrooms (house) per lb. ...	0 10	1 0
— outdoor, p. pk.	1 2	2 0
Buttons, per lb.	0 10	1 0
Mustard and Cress, per dozen pan	1 0	1 6
Onions (Valencia), case	6 0	—
— Egyptian, bag .	3 6	—
— pickling, per bushel	2 6	
— French, ½ bag .	2 6	—
— Dutch, bag ..	3 6	
Parsley, 12 bunches	1 0	—
— ½ bushel ...	1 6	2 0
Salsafy, per dozen bundles ...	3 6	—
Tomatos:—		
— English, per 12 lbs.	3 3	3 6
— small, selected per 12 lbs. .	2 6	3 0
— seconds, per 12 lbs.. ...	1 0	—
— outdoor, per 12 lbs.	3 0	3 3
— French, per crate	2 6	3 0
Turnips, per cwt.	3 0	—
— bags .. .	3 0	—
Watercress, per doz. bunches ..	0 4	0 6

REMARKS.—Some fine Californian Apples have arrived and they were sold to-day (Wednesday) by auction, at 11s. per case. According to reports, large quantities of foreign Apples are to be consigned to this country during the coming season. English Peaches will undoubtedly finish this week. English Figs are over, but a plentiful supply of these fruits is arriving from Italy. West Indian Red Bananas are more plentiful and command a better trade. Owing to the recent heavy rains and the mild weather vegetables are excessively plentiful. *E. H. R., Covent Garden, Wednesday, October 10, 1906.*

POTATOS.

Bedfords, 60s. to 65s.; Blacklands, 50s. to 55s.; Kents, 70s. Trade is very dull, although large supplies are arriving. Many of the tubers are badly diseased. *John Bath, 32 and 31, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Yesterday morning (Tuesday) larger supplies of plants were noticed than I have seen for a long time. Most of the stands in the new portion of the market were well filled, but the salesmen complain that the light in this new wing is bad, and the passages between the stands are too narrow. Chrysanthemums were never seen in better quality, or in such large numbers as at present. It is difficult to quote prices, for some salesmen will sell blooms from 4s. to 6s. per dozen and others refuse 6s. to 9s. for the same quality flowers. I find the prices for cut Chrysanthemums more uniform than those for plants. When buying Liliums some few days ago I found 4s. per dozen was the price asked all round the market, but some were of better quality than others at the price. Liliums in pots are of good quality, but they are not in much demand. Chrysanthemums are still the more numerous among pot plants. Ericas include E. calfra (which has come in later than usual this season), E. hyemalis (which is seen in very well-blossomed plants), and E. gracilis, which is good in all its varieties. Small Ericas in 60's and thumb pots sell well, and are now almost as prominent as small Ferns, which they are to some extent superseding. Asters and Marguerites are both plentiful and good. Lily of the Valley in pots has rarely been seen in better condition. Spiræas are chiefly the old S. japonica, but some good plants of S. multiflora compact are to be had. Ferns and Palms are very abundant. Aralia Sieboldii is arriving from several growers. Some of the plants will prove disappointing to their purchasers. Codiæums (Crotons), hardy shrubs, climbers, &c., are now coming from several growers.

CUT FLOWERS.

To instance how the prices of cut flowers fluctuate from week to week, a few days ago I could not buy Lily of the Valley under about 10s. per dozen bunches, but this morning I could purchase better flowers at 6s. per dozen bunches, and some for considerably less. Lilium longiflorum is plentiful again, and prices are a little lower. A day or two, however, may see a rise again; it is apparent that for some time to come they will keep up to fair average prices, and they may possibly exceed them. Pancratiums are now over plentiful. Better quality Violets are seen. Chrysanthemums are seen in great quantities. Mrs. J. W. Scott (white), to which a First-Class Certificate was given by the N.C.S. last week, has been making 4s. per dozen for best quality blooms. Miss B. Miller still takes the lead as a yellow variety. Lutz was the name given me for the best pink market kind. Market White is still extensively grown, but it withers quickly, and once the florets droop they never recover again. La Pactole is again a favourite, and of this variety some good plants are seen. Roses continue plentiful; a few of special quality make good prices, but many are cleared at low figures. The same may be said of Carnations. Growers who wish to be up-to-date must cultivate the American varieties. An abundance of foliage of all kinds is seen, including well-coloured sprays from hardy subjects. Pernettyas in berry are plenty. *A. H., Covent Garden, Wednesday, October 10, 1906.*

THE WEATHER.

THE WEATHER IN WEST HERTS.

A week of growing weather.—All the conditions during the past week have, considering the time of year, favoured rapid growth. Since the month began the days and nights have been more or less warm. The uniformity of the day temperatures has been remarkable, in fact, for six consecutive days the highest readings only ranged between 63° and 64°. It is the nights, however, that have been so exceptionally warm. On two of them the expected thermometer never fell lower than 55°, which is the highest minimum reading recorded here in October for 13 years. The ground has also continued very warm, and is now 4° warmer at 2 feet deep and 6° warmer at 1 foot deep than is reasonable. Three and a quarter inches of rain has already fallen this month, or rather more than the average rainfall for the whole of October, the wettest month of the year. Less than half a gallon of this rainfall has come through the percolation gauge on which short grass is growing, but 1¼ gallon or about three fourths of the total fall, through the bare soil gauge. The sun shone out on an average for 2¾ hours a day, which is about half an hour a day short of the October average. Light airs have mostly prevailed during the week, but on one or two occasions for a short time the gusts have been moderately strong. The mean amount of moisture in the air at 3 p.m. exceeds the seasonable quantity for that hour by as much as 10 per cent. *E. V., Berkhampstead, October 10th, 1906.*

SCHEDULES RECEIVED.

ECCLES, PENDLETON, AND DISTRICT CHRYSANTHEMUM SOCIETY'S 20th annual exhibition to be held in the Town Hall, Eccles, on Friday and Saturday, November 9-10, 1906.

BIRMINGHAM AND MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT AND FLORICULTURAL SOCIETY'S exhibition to be held in the Bingley Hall, Birmingham, on Tuesday, Wednesday, and Thursday, November 13-14, 15, 1906.

ENQUIRIES AND REPLIES.

CLAY FOR HOT-WATER PIPES.—Can any of our readers inform *M. P.* where to obtain the clay that is used for covering hot-water pipes, and also the name of it.

ANSWERS TO CORRESPONDENTS.

AN ACRE OF ECLIPSE CAULIFLOWERS: *W. E.* Assuming that your plants of Eclipse Cauliflower have been planted in rows 2 feet apart and at the same distance from plant to plant in the rows, this would give a total of 10,890 plants to the imperial acre, and would contain 181½ tallies, consisting of five dozen Cauliflowers each. Prices in Covent Garden Market at the end of last week ranged from 7s. to 9s. per tally. So at the lower figure your Cauliflowers would be worth £63 10s. 6d., and at the higher quotation £81 13s. 6d. per acre (gross). But in a near eastern county the best wholesale current price is 5s. per tally: £45 7s. 6d. per acre. Therefore we should say that £63 10s. 6d. per acre is a fair average price, always bearing in mind that an over-abundant supply of produce dumped in the market necessarily tends to reduce prices. Probably the prices in your district would be slightly higher than the average indicated above. Still, the question of supply and demand must always govern prices.

APPLES DISEASED: *T. M.* The fruits are affected with brown rot disease, caused by a fungus, Monilia fructigena. Thoroughly drench the trees and the surrounding ground during the winter with a solution of one pound of sulphate of iron, dissolved in four gallons of water. When the leaves have just unfolded, spray the trees with Bordeaux mixture, made at half the usual strength. The fungus appears first on the leaves. Collect and burn all the diseased fruit.

D. H., Fife. The fruits are disfigured with Apple scab, the work of a fungus, Fusicladium dendriticum. Apply the same remedial measures as are recommended to *T. M.* for brown rot.

APPLES FROM SAME TREE: *A. B.* We do not recognise either of the Apples. The particulars you give are most interesting, but without seeing the tree we cannot account for the difference in the fruits. Apples do not often produce bud sports, most varieties having been obtained by seedling variation. They do occasionally produce sports, and if you turn to p. 235 of our issue for September 29 you will see a description of what is supposed to be a vegetative sport upon the well-known Hessle Pear. Our selection in a class for six varieties from the sorts you mention would be as follows: 1, Cox's Orange Pippin; 2, Ribston Pippin; 3, James Grieve; 4, Allington Pippin; 5, King of the Pippins; 6, Blenheim Pippin. Barnack Beauty is classed as a dessert kind by the Royal Horticultural Society, and may be used instead of any badly coloured dish of the above-named varieties.

BEECH BARK: *A. R. G.* The trees are badly infested with the Beech coccus. Scrub the bark with caustic alkali wash, working the fluid well into the crevices.

BEGONIA ROOT: *T. E. H. H.* This diseased condition is the result of the attack of mites. Dip the plants in tobacco water.

CARNATIONS DISEASED: *C. M.* and *G. H. B.* The plants are attacked by a fungus. Burn the affected plants and spray the healthy ones with weak Bordeaux mixture or liver of sulphur, 1 ounce to a gallon of water.

CELERY DISEASED: *J. W.* The plants are affected with the Celery disease which is caused by a fungus named Cercospora apii. Spraying with Bordeaux mixture is the only known preventive.

CHRYSANTHEMUMS: *Mum.* If you are a Fellow of the R.H.S. we should advise you to avail yourself of the services of their consulting chemist to ascertain what is the cause of the malady. The fee is moderate. *H. E.* We find neither insect nor frost. The appearances are consistent with the application of some caustic solution. Have you been using some insecticide of too great a strength? *J. P. R.* The flowers are reverting to their original so-called single form, but we are unable to say why they are doing so.—*E. D.* The rust is caused by a fungus, Puccinia Pheraea. Spraying with potassium sulphide (liver of sulphur), half-ounce to a gallon of water, is the best remedy. See article on, and illustration of, this disease in the *Calendar of Garden Operations*, to be obtained from our publishing department, post free, price 7½d.

CORRECTION.—In the note "Constructing a Cheap Greenhouse," on p. 235, instead of the number 10 000 which occurs on line 13, read "about 1,500."

CUCUMBERS: *X.* There is no trace of any disease and the falling is probably due to some fault in treatment. Too much water at the root often is the cause, but we cannot be certain of the exact cause without seeing the plants.

CYCLAMENS: *G. H.* If you dip the plants occasionally in tobacco water, the thrips will be killed.

DIMENSIONS OF SHOW BOARDS: *D. T.* The regulations of the National Rose Society fix the dimensions as follow: 4 inches high in front and 18 inches wide, and of the following lengths, all outside measurements. For 24 blooms 3 feet 6 inches long, for 18 blooms 2 feet 9 inches long, for 12 blooms 2 feet long, for 9 blooms 1 foot 6 inches long, and for 6 blooms 1 foot long. For 8 trebles 3 feet 6 inches long, for trebles 2 feet 9 inches long, and for 4 trebles 2 feet long. The National Chrysanthemum Society's regulations state that exhibitors *must* have their stands made

of the following dimensions, viz., stands for 12 Incurved blooms to be 24 inches wide from left to right, and 18 inches deep from back to front, with holes 6 inches apart from centre to centre, to stand 6 inches high at back, and 3 inches high in front. Two "twelve boards" may be used for 24 blooms, 3 for 36 blooms, and so on. The stands for 6 Incurved blooms to be 12 inches wide from left to right, and 18 inches deep from back to front, for 12 Japanese blooms to be 28 inches wide from left to right, and 24 inches deep from back to front, the holes 7 inches apart from centre to centre. Stands for 6 Japanese blooms to be 14 inches wide from left to right, and 21 inches deep from back to front. The height at the back to be 7 inches and 4 inches in front. To add to the general effect, the blooms in the front row of a stand to be just clear of the board. All stands and their supports to be painted green, and the supports must be secure. All cups or wires for exhibiting Japanese blooms shall be limited to 3 inches in diameter and no extra supports of any kind shall be allowed.

DOUBLE RICHARDIA: *G. F. M.* The abnormality is of common occurrence. The leaf on the flower stalk has become spathaceous.

ERICAS: *G. C.* The plants have indications of a slight attack of mildew. Probably the position out of doors, selected for them to occupy during the summer, was hardly suitable. Under the shade of the wall you mention, the atmosphere may have been somewhat stagnant, and Heaths will not succeed under such conditions.

FERN FRONDS INJURED: *T. C.* The Fern is attacked by common thrips. Thin-fronded varieties, such as the specimen sent, are more liable to attack than some others.

GRUBS IN LAWN: *H B.* The grubs are the larvæ of the cockchafer and they are most injurious to the roots of grasses. Starlings are their natural enemies, and you should encourage these birds by the placing of nesting-boxes in suitable positions about the golf links, for in the birds will be found the best means of keeping down the cockchafers, although sowings of nitrate of soda and soot are said to be useful in reducing the number of larvæ.

HYACINTH BULBS DISEASED: *H. S. E.* The bulbs are affected with a kind of bacteriosis caused by Pseudomonas hyacinthi. You will find a full account of this disease in our issue for May 12, 1894, p. 592. No remedial measures are known; you had therefore better burn the bulbs to prevent the disease from spreading.

LAND FOR FRUIT TREES: *W. N. B.* Fairly good results could be obtained from your piece of grass land if thoroughly well prepared before planting the trees. It would be necessary to apply farmyard manure very liberally, not only by incorporating such manure with the soil before planting, but also by applying periodical surface-dressings to the roots of the trees. Such mulchings as they are termed would help to conserve the moisture in the soil during dry weather. We cannot advise you to plant on the grass under the circumstances, but would recommend you to trench the ground, and chop up the turf to be mixed with the soil constituting the top spit 18 inches thick. This is an expensive operation, but in the end may be expected to repay the outlay over and over again. If you do not care to go to the expense of trenching, make large holes, varying from 6 feet to 8 feet across, digging these to a depth of 18 inches, saving the turf to be chopped up and mixed with the soil when refilling the hole. When the holes have been refilled the trees may be planted, and a good mulch of dung placed over the roots for about 3 feet from the stem of the tree. The whole of the surface of such holes should be kept free from grass and weeds for four or five years to come, or until such time as the trees have become thoroughly established. If the ground were trenched, you could plant small fruits, such as Gooseberries and Currants, between the Apple trees, and these would soon yield some return. On no account plant any trees on the ground unless you are prepared to either trench the soil or make very large holes, adding liberal dressings of farmyard manure, in conjunction with artificial manures, as thought desirable.

MILFOIL OR YARROW [ACHILLEA MILLEFOLIUM] IN LAWNS: *A B, and D. F., Sussex.* You will find a full account of the mode of growth of this plant and of the circumstances which favour its growth, or the reverse, in the *Philosophical Transactions of the Royal Society*, 1883, vol. 173, p. 1274. Speaking generally, it was found that where ammonia salts were mixed with mineral manures it was nearly banished. It follows from this that sulphate of ammonia, in conjunction with salts of potash and soda, lime, magnesia, form a suitable dressing more especially as the manure conduces to the growth of the grasses, which overcome the weeds. The mineral manure may be composed of three parts sulphate of potash, two parts sulphate of soda, one part sulphate of magnesia, one part superphosphate of lime, and one part sulphuric acid, to which four parts of ammonia should be added. Any druggist would mix these ingredients for you. Or you may apply a dressing of finely sifted fowl manure at once. In the month of February give a dressing of sulphate of ammonia 4 ounces per square yard of surface lawn. An application of soot at the rate of 40 bushels per acre would be of great advantage. This may be given in March or April and in addition to the sulphate of ammonia. Do not use nitrate of soda as this manure encourages the growth of Yarrow.—*B.* Read what is said in the answer to *A*, and as your lawn is of small dimensions we can only suggest that you dig up the roots, taking care to extirpate the plant, thoroughly filling the holes with finely sifted soil in which grass seed have been mixed. As Milfoil bears cutting well, and does well in a dry season, many people do not object to its presence on a lawn. A liberal dressing of farmyard manure will tend to promote the growth of the grasses at the expense of the weeds.

MILLER'S DICTIONARY: *H. S. H.* Your edition is the eighth, and botanically the most important. We do not know its commercial value; apply to some secondhand booksellers or advertise it for sale.

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

H H B. 1, Kerry Pippin; 2, Old Nonsuch; 3, Pitmaston Pine; 4, Louise Bonne of Jersey; 5, Brockworth Park; 6, Fondante d'Automne.—*E. Freeman.* 1, 2, 3 and 5, Cellini Pippin; 4, Warner's King; 6, Domino.—*Mrs. Horne.* 1, A grand fruit of Hollandbury; 2, Alfriston.—*L. T.* Round Winter Nonsuch.—*Durham.* King of the Pippins.—*J. T. S.* 1, Wormsley Pippin.—*Orton.* 1, Pott's Seedling; 2, Cellini Pippin; 3, send again later; 4, Summer Pearmain.—*T. W. C.* 1, Yorkshire Beauty; 2, Norfolk Beefin; 3, American Mother; 4, Broad End; 5, Scarlet Golden Pippin; 6, Minchull Crab.—*G. D.* 1, Waltham Abbey Seedling; 2, Round Winter Nonsuch; 3, Mabbott's Pearmain; 4, Ribston Pippin; 5, Cox's Orange Pippin; 6, Striped Beefin; 7, Stirling Castle.—*A. S.* 1, Peasgood's Nonsuch; 2, Adam's Pearmain; 3, Cheshunt Pippin; 4, Sops in Wine; 5, Hormead's Pearmain; 6, Alfriston.—*H. L.* 1, Decayed; 2, Duchess of Oldenburgh; 3, Byford Wonder. The Plums were smashed. Soft fruits should never be packed in the same receptacle as Apples, or partially ripe Pears.—*Enniskerry.* 1, Winter Strawberry; 2, Not recognised; 3, Cullen; 4, Sandringham; 5, Scarlet Costard; 6, Beurré Sterkmans.—*J. R. B.* 1, Deformed fruit, send a better specimen; 2, Doyenné Grise; 3, Williams' Bon Chretien; 4, Fondante Thirriott; 5, Thompson's; 6, Pitmaston Duchess.—*A. N. Coomb.* 1, Cox's Pomona; 2, Prince Bismuck; 3, Dumelow's Seedling (Wellington); 4, Not recognised; 5, Belle Pontoise; 6, Striped Beefin.

NAMES OF PLANTS: *C. F. T.* Aster levis.—*L. C.* (from last week) 2, Vitis serjaniæfolia; 3, Berberis Thunbergii; 4, Berberis vulgaris var. *Atropurpurea*; and *C. P.* Viburnum Opulus, a British shrub. The berries are not good to eat, but we are not aware that they are actually poisonous to man or fowl.—*G. A. C.* A very good form of Miltonia Clowesii.—*F. C. L.* Clematis coccinea.—*F. R.* 1, Pear, imperfect specimen not recognised; 2, Amaryllis Belladonna; 3, Hedychium Gardnerianum; 4, Dimorphanthus mandschuricus; 5, Cratægus orientalis, 6, Sarcanthus paniculatus; 7, Polypodium subauriculatum; 8, Ficus stipulata.—*H. W.* Ceratostigma plumbaginoides; syn. Plumbago Larpentæ.—*F. T.* 1, Send fertile frond; 2, Lastrea trichodes; 3, Nephrodium molle; 4, Lastræa Sieboldii; 5, Selaginella Wildenovii; 6, Lastrea tsus-simensis.—*C. E. F., Bristol.* The Jamaica Orchid, referred to last week as Xylobium species, is Xylobium decolor (Maxillaria decolor) syn. Xylobium palmiforme.—*H. H.* 1, Miltonia Regnelli purpurea; 2, Oncidium tigrinum; 3, Oncidium Forbesii Borwickianum (illustrated *Gardeners' Chronicle*, April 26, 1879, p. 525); 4, Oncidium ornithorhynchum; 5, Ornithidium Sophronitis.—*Upcott.* Chrysanthemum uliginosum.—*H. G. H.* Cattleya Bowringiana and Adiantum tenerum.—*A Reader.* 1, Chrysanthemum uliginosum; 2, Helxine Soleiroli.—*W. W.* 1, Polygonum Persicaria, annual; 2, not found; 3, Ranunculus acris perennial; 4, Rumex Acetosa, perennial; 5, Cerastium vulgatum, annual; Prunella vulgaris, perennial. You can only hoe them up and burn them before they seed, or plough them in.

ORNAMENTAL BERRIES: *W. C. M.* You can only ensure the safety of the berries by protecting them with netting, which, in such cases as yours, is not desirable, the Cratægus being grown against the wall for ornamental purposes only. Have you tried spraying of the trees with a solution of quassia extract, in order to make the fruits distasteful to the birds? Such sprayings would have to be repeated almost every day during showery weather, or they would be ineffective. Even then, the birds being so mischievous, they might pull off the fruits, although refusing to eat them.

POPLAR CASTING ITS SHOOTS: *T. B.* It is quite a well known habit of the Poplar as of the Oak to cast many of its latest formed shoots, but trees do not do this under all conditions. It appears as if certain trees shed them in a natural effort at thinning, and to prevent the shoots developing into a thicket. At any rate, the process, like the shedding of leaves, is a natural one, and is described by botanists as chaloptosis.

PTERIS WIMSETTII: *T. C.* The injury has been caused by the common thrip. Fumigate the house in which they are growing, with some insecticide, such as the XL-All vaporiser.

PUFF BALL: *D. McD.* The specimen you send is the Giant Puff Ball, Lycoperdon giganteum, one of the most delicious of edible fungi when in its young state, the flesh being then snow white. It should be cut in slices less than half an inch in thickness, smeared with the white of an egg and sprinkled with breadcrumbs before being fried in butter, season with pepper and salt according to taste. A full account of this fungus, and a figure, is given in *Gardeners' Chronicle*, 1860, p. 289.—*M. C. C.*

VINES: *R. C. T.* We have examined the roots very carefully, but have failed to discover any indications of Phylloxera. If this pest is present in the roots, it usually produces gout-like swellings. It is more probable that the roots have got into some soil that is unsuited to them, and are dying in consequence of this.

VIOLETS DISEASED: *F. C. L.* The plants are affected with the disease that has recently become so common among Violets. It is caused by a fungus, Ascochyta violæ. Spraying with a weak solution of potassium sulphide—1 ounce to 2 gallons of water is recommended, but the better plan is to burn the old stock and start afresh with healthy plants.

WORMS IN LAWN: *J. L.* Apply to Cooper, Taber and Co., Ltd., 90 and 92, Southwark Street, S.E., for their Chinese Worm Soap, which we know to be very useful for the purpose.

COMMUNICATIONS RECEIVED.—F. T. W. (Thanks for contribution to Royal Gardeners' Orphan Fund).—S. W. F.—W. and N.—H. R.—H. S.—W. E. B., Grenada.—H. M. V.—Sir T. L.—Burwash (photo with thanks).—R. T., Jamaica.—Little and Ballantyne.—T. S. Newry.—T. Humphreys.—Mrs. J. R.—S. M. W.—H. Bosmer.—W. E. G.—J. B.—C. H. H.—J. N. S.—F. L.—A. D.—F. R. R.—Fruits from various Correspondents.—Squire.—T. S.—R. S.—W. B.—C. E. A.—C. R.—H. W.—Mrs. H.—E. C.—C. D.—C. W. L.—C. G. L.—W. E. C.—N. Y.—C. N.—S. B. B.—W. J. P.—H. J. C.—J. L. W.—W. M.—W. S., Grenada.—G. D.—C. H. M.—H. R.—S. C.—F. W. J.—R. P. B., Udaipur.—F. W.—S., Nami Tal.—C. P. R.—J. B.—D. R. W.—A. W. H. S.

THE
Gardeners' Chronicle
No. 1,034.—SATURDAY, October 20, 1906.

CONTENTS.

ILLUSTRATIONS.

ROCK-GARDENS.

ALPINE and other diminutive plants that live either on high mountain ranges, on dry, arid plains, or under conditions that may be described as calculated to arrest growth, require a highly-specialised treatment when under artificial cultivation, and one that the ordinary garden cannot provide without some special preparation. Partly to meet the cultural requirements of these mountain treasures, and partly to introduce into their surroundings some measure of beautiful rock scenery characteristic of their native home, the formation of a rock garden becomes necessary. Sometimes these rock gardens represent mountain scenery in miniature, but ofttimes the health of the plants alone is considered, and one finds stone pockets skirting a path, each pocket being painfully square, and an exact counterpart of its neighbour. Rarely does one find a rock garden happily placed, cleverly constructed, and filled with plants whose health and position command the admiration of the geologist, botanist, artist, and gardener alike. The many rock gardens that appear trivial, or too obviously artificial, and ofttimes too massive, generally owe their unfitness to one of three adverse conditons—unsuitability of the site for its purpose, faulty construction, or too abrupt an intrusion into the garden landscape. Not every garden has an ideal site for a rock garden, and it is generally an expensive business making one where the natural conditions are not helpful. Again, the necessary materials may be difficult to procure, and as one always finds that a bad substitute never ceases to be such, it is better in such a case to confine one's efforts to the modest series of pockets that can be made of any material and be placed almost anywhere; for then nothing is attempted that cannot be done well.

The rock garden for the small estate may be confined to an informal retaining wall, a series of outcropping boulders set in a grassy slope, or to a broad edging of rock that so frequently serves to define the flower border. Such sites will provide accommodation for many Alpines that cannot be well grown on the level borders, and they are often more easily managed than a well-appointed rock garden. In fact, with a sufficient edging formed of rocks and a necessary retaining wall space one can grow every Alpine that proves amenable to cultivation, and ofttimes succeeds better with difficult plants than is possible in larger types of rock gardens. There is, however, no greater source of pleasure than a well-constructed rock garden that is planned to harmonise with its surroundings, and the structure itself can be made a thing of beauty, at all seasons. Such a rock garden need not be very large nor very costly. The giant masses of stones that are placed in position simply because they look grand and rugged in appearance miss their special aim and object in a rock garden in which it is desired to grow rare plants that cannot be grown in a flower garden. One does not wish to criticise the landscape gardener who uses masses of stone in places where he thinks it desirable to use them, but one ought to consider a rock garden as a home for Alpine plants, for if it fails in this respect it becomes something that is not a garden.

Materials for a Rock-Garden.

Splendid effects may be obtained by the use of a few tons of natural rock, and if they are judiciously disposed, the boulders can be made suggestive of ten times their real bulk. It is essential, however, that the stonework appearing above ground should be natural rock, and that alone, although the other substances that one often finds in a rock garden have their value if wholly covered with soil. The rock garden whose obvious stones embrace granite from Aberdeen or Cornwall, gritstone from the Midlands, ragstone from Kent, limestone from the Mendips, "hards" from the nearest furnace, concrete, monumental and other worked stone, flints, pottery, brick- and brick-ends, etc., can never be more than a heap of rubble covered with plants. Manufactured stone deceives no one, and as it fails in this purpose it should be discarded. Boulders placed regardless of their natural formation and in all manner of positions become eyesores till they are partially or wholly covered, and it is little wonder that a rock garden starting abruptly with a huge pile of sentinel-like boulders and finishing in a similar manner gives one the impression that the garden has not benefited by its presence.

The best material for the formation of artistic rock gardens is weathered limestone; failing this, any stone showing striations along which it can be readily split. Limestone lends itself admirably to the formation of natural-looking strata; it weathers well, is not of an aggressive colouring, and it can be used to face a declivity. A projecting "bluff" with scored and waterworn face is only effective when made of waterworn limestone, and the innumerable cracks, fissures, and hollows its surfaces present, or that can be artificially fashioned upon them, will delight the plantsman, for therein he can grow all those Alpines that prove difficult of management and for whose accommodation rock-gardens are designed. It may be objected that limestone does not suit all plants; that is quite true, but we can, with cultural aid, overcome this dislike. In fact, the legend "objects to limestone," that one often sees affixed to a description of many of the rarer Alpines is in practice of no account. The one all-governing factor in the cultivation of Alpines is the maintenance of a moisture limit, and the provision of ample fissure accommodation helps immeasurably in maintaining this limit. The plant that has been accustomed to fight hard for its existence on the higher Alps, extracting moisture from deep, but narrow cracks, into which a little vegetable débris has been blown or washed, existing, may be, on moisture that filters from a higher plateau, or from the dew of clouds trickling down the faces of the rocky formation, cannot endure the carefully-tilled soil of the plains. It still needs a scanty larder, it still appreciates a warm fissure and the airy elevation, and these requirements the limestone fissure of the rock garden—protected from rain or not as the plant may require—provides in no uncertain way. The plant that can be grown well in a spacious "pocket" filled with soil will grow equally well in the plant border, and a rock garden is not an essential to its welfare.

An Ideal Rock Garden.

A small rock garden can be built on a garden slope in such a way as to represent serried crags jutting from turf, or from a setting of low-growing shrubs. Let us consider such a rockery. A close observation gives the impression of a bold formation in which the lines of stratification are abundantly manifest, the whole rock garden, whilst not aggressively bold, appearing to be a giant "bluff" of limestone rock whose prominent crests have out-cropped from the turf, its uppermost and largest boulder appearing much serried and weatherworn, while its near neighbours, less prominent, but also much weatherworn, are covered with plants wherever the latter can obtain a foothold. Low shrubs surround these lower stones to hide their bases. One studies the masses of stonework and notes how they all describe the same angle earthward, their faces prominently exposed to all weathers—are much seamed, and but few plants, such as Sempervivums, can find sustenance upon them. Beneath these and around them are rocks in strata that have broken off short, barely projecting from the bank or slope.

Plants and their Positions.

Every fissure is filled with such plants as Androsaces, Onosma taurica, wall Campanulas, and plants whose roots prefer to ramify in the innermost cracks of the rocks, to the best soil the garden affords. Behind these large bluffs, smaller knolls project from the surface for some distance in the background; they are of the same formation, but time has not yet succeeded in wearing away much of the soil that covers the rock. On the right and on the left hand are terraced ledges representing a vertical rift in the formation; these terraced ledges, whereon many things are growing, agree in their stratification with the larger boulders, but they show

greater signs of wear from the action of the weather. Still further to the right and to the left are recesses, one showing a sheer escarpment, with moisture oozing from the cracks, and Ramondias, Haberlea, Shortia, and some Ferns luxuriating therein. Another recess is partially draped with Aubrietia, Gypsophila, and its kindred in habit. At one's feet are flattened outcrops of rock, and among the surrounding debris are colonies of Draba, Erica, Lychnis alpina, with Alpine Poppies established in the vertical rift of the main blocks, that are but partially visible through the soil. Behind are more bluffs, some literally "gone to pieces," and only held in position by trails of Polygonum vaccinifolium, Cotoneaster rupestris, and Rhododendrons of creeping habit. An examination of such bluffs reveals similar veined and weather-worn fronts as those we just left, but they are not so steep, for at the feet of these are large flattened heaps of stones, a few long boulders still lie at the same angle as when they fell from the face of the escarpment, scores of Alpine plants find a home among the rocky debris and on the blocks of stone they hold together. Viewed a few hundred yards away, the first thing such a rock garden suggests is the admirable manner in which it fits into the landscape. Beyond the rockery is a grassy plateau with trees in the background; the rocky outcrop appears to hold up that grassy eminence, with a natural but dissevered terrace of rock facing the observer, its largest boulders agreeing with its smallest in their poise, and the escarpment from which they spring appears to be all but covered with plants, and where the stone work is conspicuous, the seams representing the rocky strata impress one that it is a natural rocky formation. The covering of Ericaceæ and other trailing and low-growing shrubs tone the outcrop of rock so that one scarcely sees its artificiality, and one readily concedes there is not too much rock nor too little, but just the requisite break in the landscape. A view obtained 100 yards to the right or to the left gives one different pictures. Here is a giant bluff of rock starting in a small way (literally) all round the central masses, every projecting boulder showing the same angle of stratification and "going to earth" at the same angle. Its massiveness is implied rather than real, for one has to study the site for a time to discern that the boulders are merely smaller stones pieced together in the roughest possible manner. The joints and fissures filled with plants are not so markedly bad a representation of how plants grow in Alpine regions under similar conditions. Vertical rifts, erosions, abrasions and other details of rocky formation are there in just that quantity and form one finds in any limestone rock scenery of nature's own fashioning. Such, then, is a brief description of the outcrop rockery from the landscape gardener's point of view. A small rockery in a dell or elsewhere that is not in harmony with the surrounding landscape impresses one with its utter unfitness. The rock gardens one sees nowadays are too intensive in their conception, too little consideration is given to their surroundings, and the plants to be grown in them or on them receive no cultural help from the designer. It is an easy matter to make a rock-garden picturesque in itself, but it is less easy to blend it with garden scenery so that all appears picturesque. The plantsman must welcome the outcrop rock garden for the advantages it gives him over other types of rock-gardens in the matter of plant accommodation, advantages that cannot be too diligently studied by those who grow the rarer Alpines. The exposed places will provide accommodation of the right kind for all the encrusted Saxifragas and Sempervivums; the sunny cracks will suit Acantholimon, Arenaria caespitosa, Cyananthus lobatus, and plants of kindred root formation; the ledges covered with débris will suit Campanulas of the pulla, pusilla, Raineri, Hosti and garganica sections, and hundreds of other Alpines whose roots and stems both ramble in shale. The escarpments, faced with stratified rock, will prove ideal sites for such treasures as Eritrichium nanum, Anemone vernalis, Androsaces of kinds, Wahlenbergia Pumilio, and other plants that dislike a wet leafage. The escarpments, being virtually wall-gardens of a rugged description, will have fissure accommodation of the best types, and their supporting stones could be laid so that moisture will be carried back to the soil behind the stones or made to percolate from the back forward. Thus Eritrichium and Androsaces could be placed in a horizontal fissure, the uppermost stone sheltering their leaves, the lowermost stone receding and inclining into the soil bank upward to convey moisture percolating from the soil for their maintenance. Similarly, and by a reverse process, Acantholimons, and most Campanulas would enjoy a projecting ledge and find the rainfall thus collected and carried to their roots in a downward direction ample for their purpose.

A flat rockery, with stones laid around it and upon it, gives one no advantage in the matter of a water supply. An outcrop rockery admits of half its stones forming conduits, and the other half drains, that will serve the planter's purpose admirably. *G. B. Mallett.*

(To be continued.)

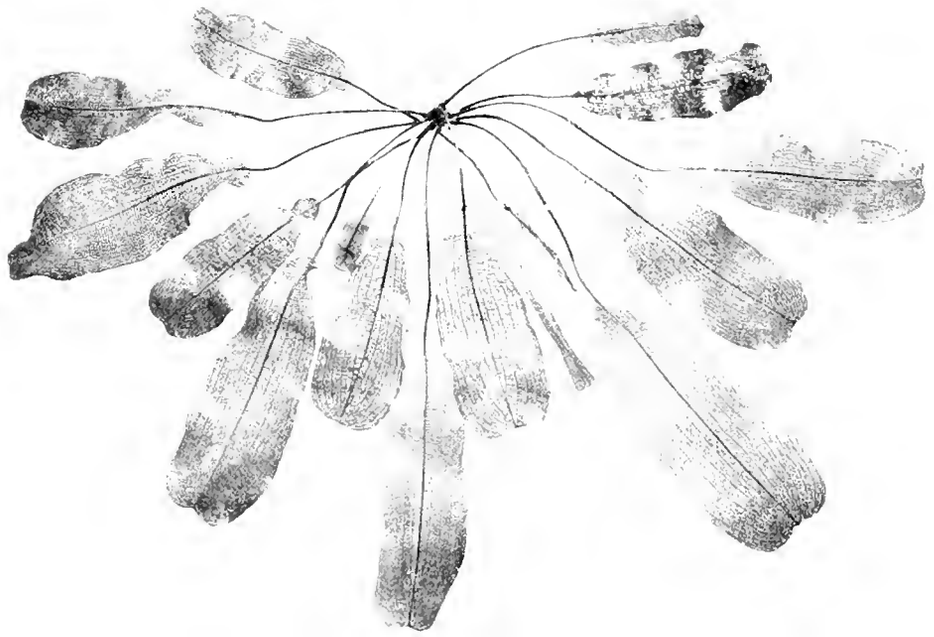


FIG. 108. APONOGETON (OUVIRANDRA) HENKELIANUM HORT.

FOREIGN CORRESPONDENCE.

APONOGETON (OUVIRANDRA) HENKELIANUM HORT.

THIS new lattice-leaf plant was imported from Madagascar in the latter part of 1904, and in the resting state shows a remarkable difference from Aponogeton fenestrale. The rhizome is bigger and the growing point is covered with a few very small scales only, and up to the present time it has shown no signs of a creeping habit, its growths remaining upright. The first leaves were something similar to those of A. fenestrale, although of a paler green colour.

Growth was slow at first, but during the summer it was more rapid, and the leaves commenced to show a great difference from all other known species and varieties in having most irregularly arranged secundary veins, as is shown in fig. 108, which is from a photograph taken in February, 1906. The leaves are not of such long duration as are those of A. fenestrale, the resting time of the plant being more pronounced, when most of the foliage dies, only, however, for growth to commence vigorously after a short rest.

One plant was given to a well-known cultivator of difficult plants, Mr. H. Baum, Curator of the Botanic Garden, Rostock, and in those gardens it reached, during February, 1906, the most remarkable size of 120 cm. in diameter.

The largest leaf was 34 cm. in length and 11 cm. in breadth, the leaf-stalk being 30 cm. long. The photographs, from which figs. 108 and 109 were prepared, were taken at the Rostock Botanic Garden.

It is to be hoped that the plant may flower so that its proper specific determination may be made. The leaves most nearly resemble those of A. fenestrale and its better growing form A. major, having only veins and no intermediate tissue between them. To recapitulate, the differences are found in its much longer rhizome, which has no tendency to a creeping habit; in its more pronounced resting stage, when it loses most of its leaves; the more transient nature of the leaves, especially in higher temperatures; and last, but not least, in the still more divided net-work of its leaf veining.

The growing temperature of the plant illustrated has been 24° to 27° Celsius (say 70° to 80°), the resting temperature 17° to 20° Celsius (64° to 68°). As there are but few of the plants imported it is still a rarity. Lovers of these most interesting lattice-leaf plants should have in their collection the major form of A. fenestrale, which is a most vigorous growing plant, doing well in almost any temperature and any house. It is a shade loving plant, and one of the finest subjects for an aquarium, doing well in any department with a north aspect.

I am preparing a small booklet in English on Aquariums, Aquarium Plants, and Fishes, and shall be glad to receive addresses of any persons interested in these matters. *F. Haakl, Darmstadt.*

ORCHID NOTES AND GLEANINGS.

MILTONIA COGNIAUXLE.

A very pretty form of this natural hybrid between M. Regnelli and M. spectabilis is flowering in the collection of De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables). In this case the M. spectabilis Moreliana, which has purple-tinted flowers, must have been one of the parents. The flowers, which are shaped like those of M. Regnelli, are broader than that species in all their parts, the broadly-ovate and flat labellum being of a claret-purple colour, with a yellow crest. The sepals and petals are creamy-white, tinged with purple on their basal halves, and with pale purple blotches on the outer portions. The genus Miltonia is very prolific in natural hybrids, and of these Mr. Crawshay has a very interesting collection, including M. Crawshayana (Regnelli citrina × Clowesii) and M. Binoti Crawshayana.

VANDA SANDERIANA.

The collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), contains the finest specimen of this noble Orchid yet seen, and it was awarded the Royal Horticultural Society's Gold Medal on October 13, 1896, when it was carrying 127 flowers, the largest inflorescence having 10 blooms. The plant was maintained in good health at Glebelands, but it did not make satisfactory growth, and Mr. Fowler attributed this to a lack of moisture in its surroundings. To more nearly approximate its environment to that of its native habitat, where it is generally found overhanging water or in marshy ground, the plant was divided, and the back of the staging in the corner of the warm house in which it is grown had an open brick-work screen arranged by placing rows of bricks, without mortar, so as to leave openings between the ends of each brick, to allow the freer circulation of air and warmth around the plant. A leaden pipe with holes in it was run over the top of the screen, or loosely built wall, and the pipe was fitted with a stop-cock to allow of water being turned on occasionally until the wall, which is higher than the tops of the plants, becomes thoroughly saturated. Since this provision for increased moisture has been provided the plants have grown more vigorously, and the foliage has become much darker in colour, and it is hoped that the secret of growing this fine species to perfection has been found.

The four and a half inch openly built brick walls, or screen, which can always be removed when necessary, is much used at Glebelands to check or regulate the circulation of heat and moisture, and their use often greatly improves the health of the plants. *J. O'B.*

THE WHEAT CROP OF 1906.

According to the results obtained from the renowned Wheat field at the Rothamsted Experimental Station, which has this year grown its 62nd crop of Wheat in succession on the same land, either without manure, with farmyard manure, or with various combinations of artificial manures, the yield is in all cases above the average, both as to quantity and quality of grain, but with a slight deficiency of straw.

The weight per bushel of dressed grain is higher than in any other year of the experiments, the nearest approach to it being in the sixth year, 1849, when 64½lb. per bushel were in some cases obtained.

The year of highest yields of produce was 1863, when several of the plots receiving artificial manures gave more than 50 bushels of Wheat per acre.

To the plot of land, half an acre in extent, which has grown Wheat without any manure every year since 1843, and for four years previously, no manure has been applied, [?] the present crop is the 67th without manure. The produce this year is 15¾ bushels per acre of 63lb. weight, and 10¾ cwt. of straw. The yield of grain without manure is 2¼ bushels over average, but rather under the average in amount of straw.

The plot which has received 14 tons of farmyard manure every year produced 43¾ bushels of Wheat of 64¼lb. weight, and 38⅛ cwt. of straw per acre. The quantity of Wheat is 8⅞ bushels above average, and the straw is 5⅜ cwt. in excess of the usual amount.

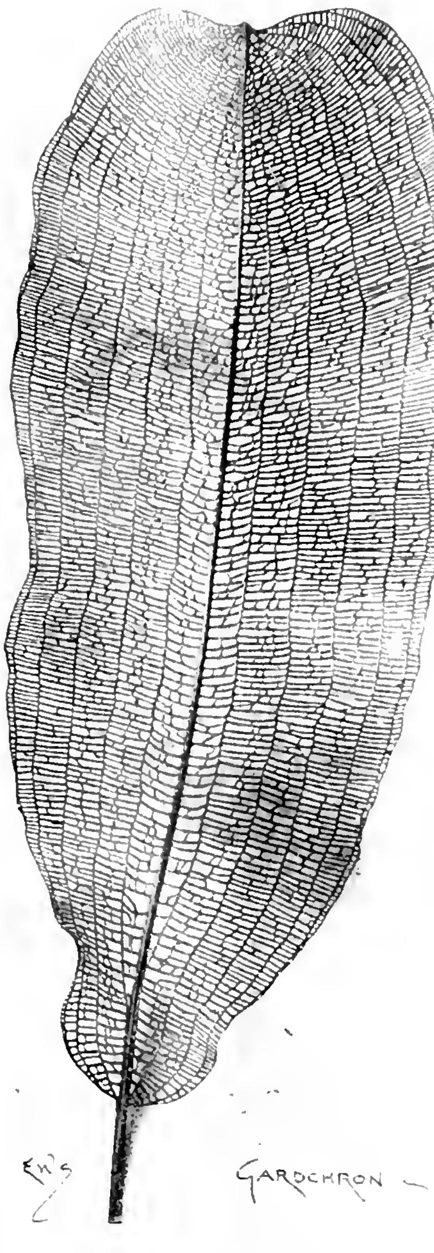


Fig. 109.—LEAF OF APONOGETON (OUVIRANDRA) HENKELIANUM HORT.

(See p. — see page 270.)

The produce of Wheat from the three plots of 6, 7, and 8 increases with each addition of ammonia salts; the grain increases from 27¾ bushels with 200lb. ammonia salts per acre to 37¾ bushels with 400lb., and to 47¼ bushels with 600lb. ammonia. Plots 6 and 7 are from 4 to 5 bushels per acre over average, while plot 8, with the largest quantity of ammonia, is 10 bushels of Wheat in excess. This is doubtless owing to the fact that the crop stood up well until the time of harvest, and so had the full benefit of the brilliant sunshine experienced.

The plots which receive nitrate of soda show that this manure is a more effective source of nitrogenous food for Wheat on the stiff loamy soil of Rothamsted than is sulphate of ammonia.

The weight per bushel of grain is in all cases from 1 to 5lb. above the average weight, and as the weight of grain is generally an indication of quality, the present season's crop of Wheat should "cut" some excellent flour for millers, and should need less foreign Wheat for mixing. *J. Willis, Harpenden.*

THE ROSARY.

ROSES WITH LONG STEMS.

The fashion now common among florists to desire roses that have long stalks has come to us from America. Such varieties are Richmond, Liberty, and General MacArthur. Liberty is of good colour, and, under good conditions of cultivation, it forms moderately long stems. General MacArthur possesses a brilliant red colour, but the plant cannot be recommended for wholesale culture, owing to its compact growth. The growth of the variety Richmond is not better than that of Liberty. American cultivators acknowledge that the above varieties only produce long stems when under special kinds of culture. The varieties named are classed as red-flowered Tea Hybrids.

ROSES FOR COLD DISTRICTS.

Roses which flower freely and early may be selected from the following list, viz., the light-coloured sport from La France, Grace Darling; the light pink Blanche Lafitte, a very early and abundant bloomer (by suitable pruning it bears as many as fifty flowers on a shoot); William Wood, the yellowish-pink G. Nabonnand, Jules Margottin, Mad. C. Testout, John Hopper, Chas. Margottin, Louise Odier, Gruss an Teplitz, Hermosa, Cheshunt Hybrid, Triomphe de l'Exposition, and Oscar Cordel. *F. M.*

ROSE GRUSS AN TEPLITZ.

I am forwarding a few trusses of this hybrid Tea Rose for your inspection, as few Roses can compare with it for an autumn display. It is a vigorous grower, and must be given plenty of space to develop its robust shoots, for although most Rose growers say it should be pruned lightly, ours are cut back fairly hard each spring in a similar manner to the hybrid perpetuals, but this depends upon the way it is grown. In our case three beds are devoted to this variety, and the plants are grown as dwarfs. As the growth extends in early summer they are pegged down to within a foot of the soil, and from these main branches a number of robust shoots spring up, and later, during August, September and October, carry immense clusters of bright crimson flowers. Planted against a low, south wall, in a very warm situation, it has not been a success, but for covering pergolas or pillars it should certainly prove a most valuable subject, especially if Roses are required during the autumn months. In such positions it would not be prudent to prune hard, but basal growths should be encouraged by cutting one or two main stems hard back each year, as by far the finest show is thus obtained. The flowers are very fragrant, and among the sweetest of their class. *J. Payne, Elton, October 3.*

[The growths received were as fully clothed with strong, freely-branched inflorescences of fragrant flowers as could be wished for in June. Ed.]

The Gardeners Royal Benevolent Institution. We are informed by the Secretary of this Institution that the Rev. W. Wilks, M.A., vicar of Shirley, Croydon, and secretary of the Royal Horticultural Society, has kindly forwarded a cheque to the Gardeners' Royal Benevolent Institution for £8 12s. 6d., being the Harvest Thanksgiving offertory at Shirley Church.

LEONARDSLEE.

(Concluded from page 251.)

THE RHODODENDRONS.

Leaving the alpine garden very reluctantly, our path lay through a kind of wood, known as the American and Japanese garden, in which there are now fewer big trees than formerly, and the undergrowth consists of choice Rhododendrons and other flowering and ornamental shrubs. The ground forms one great slope, which in places is again undulating, and the effect in the month of June is most brilliant; the masses of colour being overwhelming. Not only so, but many of the Rhododendrons are of interesting species and hybrids, for fresh planting is done every year, something rare and interesting being substituted for varieties that are more common. Although so extensive, every portion of the garden is under very close observation, and Sir Edmund is constantly engaged in planning prospective improvements. This is a fact that the visitor realises again and again as he wanders through these beautiful grounds. The following species, hybrids and varieties, have been specially good this season, and the notes respecting each have been sent us by Sir Edmund's gardener, Mr. W. A. Cook. R. glaucum (Himalaya), of light rose colour and dwarf habit, in flower from May 25 to June 25. R. ferru-[illegible] very pretty Alpine [illegible] ty, forming round bush, cov[illegible] with small leaves; the flowers are [illegible] funnel-shaped, in light shade of r[illegible]; full flower [illegible] 15; the white variety is also [illegible] R. hirsutum is very similar [illegible] from a distance, but it is covered with small hairs, both on the flowers and foliage; there is also a white variety: both make excellent "dot" plants in the rock garden. R. ciliatum is liable to get damaged by April frosts; the flowers are white with rose blush; the plant flowers with great freedom, and makes a compact bush from 2 to 3 feet in height; it forces well, and the flowers are then quite white. R. racemosum is another smaller [illegible] species, and suitable for the rock garden, where it flourishes well; the colour is a light shade of pink, and it flowers at the end of April and in May. R. punctatum, a very dwarf, evergreen species, that produces rose-coloured flowers, about the size of a shilling, in June. R. Rosy Belle, a dwarf growing plant that flowers in April, and is very effective, but it is liable to be cut by frost. R. Ascot Brilliant flowers towards the end of May, and the blooms are very rich in colouring. R. Shilsoni flowers early in February and March, and is a hybrid from R. Thomsoni and R. barbatum; the flowers are of most brilliant colour and produced in large trusses very freely. This hybrid flowered outside in February, but some tiffany was put over it on cold nights, and also to prevent the birds from picking the flowers. R. Thomsoni (Sikkim) flowered outside in April; the flowers are scarlet and when seen with the sun shining on a good batch the sight is dazzling; the plants require good culture. R. Luscombe Hybrid has red flowers, and is very handsome. R. yunnanense flowers in May, and is of smaller stature. The flowers are white with red spots, and measure about 1½ inches across. R. cinnabarinum (orange scarlet) is one of the most interesting Himalayan species. The flowers are produced in clusters, and resemble in shape a Lapageria flower; the petals are very thick. Plants here are 7 feet in height and 7 feet through, and they flower very freely. R. Blandfordianum is similar but lighter in colour, being light red toned to yellow. This is quite as free as cinnabarinum, and makes a fine plant in the American garden, but it requires some amount of shelter in severe winters. R. Fortunei is a very fragrant species, and flowers later than many Himalayan species, hence it is not so often cut by late frost. R. fulgens has blood-red coloured flowers, produced in small, compact trusses in April and May, and is very liable to suffer injury from frost at the time of flowering. R. barbatum (Sikkim) is the earliest to flower (January). The flowers are blood-red and bell-shaped, 1½ to 2 inches across. The plants need a warm corner and a little protection in severe weather. R. arboreum, also a white variety, and R. campanulatum were also good. R. campylocarpum (Himalayan) flowers in April, and is one of the best of the yellow-flowered Rhododendrons.

The latest to flower is R. lepidotum, which has a very small flower; it is a curious but

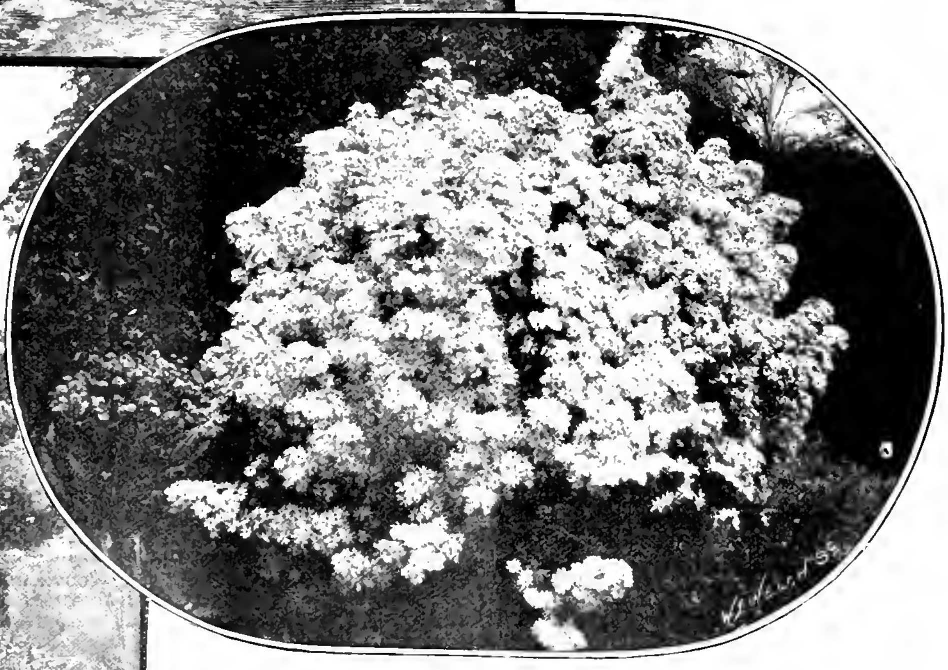


FIG. 110.—LEONARDSLEE.

(1) View of bridge over lake. (2) Saxifraga longifolia blooming in the Alpine Garden. (3) Olearia Gunniana.

interesting plum-coloured flower not more than an inch across. R. punctatum has flowers about three-quarters of an inch across, of light rose colour; R. azaleoides is a very sweet-scented variety.

Amongst the earlier-flowering hybrids are R. kewense (a fine plant 7 feet in height), R. Manglesi, and R. Pink Pearl.

Hybrids and Varieties.

Amongst those which have succeeded best this season are the following:—Marie van Houtte; Sappho (white, with blackish markings); F. B. Hayes (similar to the last); album elegans (white); album grandiflorum (white); Lady C. Walsh (red, edged with pink); concessum (light in centre, margined with rose); Duchess of Connaught; E. S. Rand; Scarlet King; Silvio (purple); Memoir (white); Nasmyth (maroon); Michael Waterer (crimson); Kate Waterer (rosy crimson and yellow); Mrs. C. Leaf (rose); James Marshall Brooks (scarlet); Helen Waterer (scarlet and white); Mrs. John Clutton (white); californicum; Barclayanum (dark crimson); Blandyanum (crimson); Blanche Superbe (white); Caractacus (crimson); fastuosum fl. pl. (light lilac); J. Nasmyth (lilac and maroon); Mrs. Tom Agnew (white, with yellow blotch); J. H. Agnew (pale blush with chocolate spots); Lady Eleanor Catheart (rosy crimson); William Austin; Doncaster (scarlet); fragrans (sweet scented); Fleur de Marie (pink); Othello; Mrs. J. Clution; Old Port (plum-coloured); Auguste van Geert; Prince Camille de Rohan (rosy pink); Mrs. Holford (salmon-crimson); A. Vervaet; Fred Waterer (crimson); Minnie (blush white with orange spots); Butlerianum (light pink); Star of England (pinky-white); J. M. Brooks (scarlet with bronze eye); Stella (pale lilac); Marchioness of Lansdowne (rose-spotted); ochroleucum (pale yellow); gloriosum (bluish white); W. Austen (dark crimson); pictum (white, with lemon spots); Surprise (light rose); Nero (rich purple); H. Sargent (crimson); limbatum (white ground, margined with crimson).

Bamboos.

The collection of Bamboos at Leonardslee is scarcely less remarkable than the number of hardy Palms. Some of the specimens reach to as much as 22 feet in height. Some of the most flourishing and prominent are Bambusa palmata, B. Veitchii, Phyllostachys fastuosa, P. mitis, P. nigra, P. flexuosa, P. Quilioi, and P. viridi-glaucescens, clumps of this last-named species having a diameter equal to 24 feet.

The excellent borders of herbaceous flowering plants provide interest for the visitor, and afford flowers for cutting from early in spring until a short time before Christmas.

Collection of Ericas.

In December Erica carnea and its white variety begins to open its flowers, and in January the plants are a veritable sheet of colour at a height of from 4 inches to 9 inches. E. codonodes (Lusitanica) commences to flower early in January, and continues to flower until May, one of the most beautiful of all, flowering on plants from 2 feet to 10 feet in height. Next in succession is E. arborea (the almond-scented Erica), and from a good-sized plant one can smell the perfume for some considerable distance. This variety is sometimes confused with E. codonodes. E. mediterranea follows E. arborea, and is a more bushy variety, but, like E. arborea, grows 6 feet to 10 feet in height. After the end of May E. cinerea (Scotch Heather) commences to bloom, and flowers right away through July and August. There is also a white variety, which is very prolific in flowering and is much sought after for bouquet-making. These are generally from 1 foot to 2 feet in height, varying a little according to the soil in which they are growing. E. ciliaris (Dorset Heath) succeeds very well in Sussex; it has long slender stems, on which are borne long racemes of purple flowers, and on these are the largest individual flowers of any of our Heaths. The branches are covered with fine hairs. This Heath flowers from July until the end of September. E. Tetralix (cross-leaved Heather), a native species of dwarf growing habit with terminal clusters of pretty pink flowers, has much darker foliage than many. There are several varieties, including alba and rubra. The species grows from 1 foot to 2 feet in height, and flowers from July onward to September. E. vagans (Cornish Heath) is useful when planted in good soil and in a suitable situation. Its long racemes of pink flowers are suitable for cutting. This variety requires much pruning after the flowering stage.

Dabeocia polifolia (St. Dabeoc's Heath), more commonly known as Menziesia polifolia, grows from 1½ feet to 2 feet in height, and has bell-shaped flowers on terminal spikes, sometimes white and often purple and occasionally both. E. vulgaris loves the sand hill-sides, and when in flower is wonderfully pretty. E. v. Alportii is one of the best varieties, being dark pink in colour and very showy. E. v. Foxii is a suitable plant for the rockery, rarely exceeding 3 inches in height. The prettiest plant of all is E. v. var. flore Pleno, its little double flowers being thickly clustered and a bright rosy pink. E. cinerea rigida is a dwarf-growing, dark purple-coloured variety of the Scotch Heather. E. vulgaris Searlei alba is valuable as a late bloomer. E. stricta is an erect growing variety. We had almost forgotten Erica × Veitchii, which flowers in April. It is a handsome plant and grows in an upright direction.

A Show of Sarracenias.

Proceeding over a rustic bridge, we crossed the water already alluded to, and noticed Gunnera manicata and many other handsome water-loving bog plants, but the most interesting sight on this side was that of the American Pitcher plants. There were colonies naturalised down by the water side in large groups, carefully protected from the water fowls, rodents, &c. Can the reader imagine a group of Sarracenia plants ornamented with at least 220 of the richly-purple, curiously-formed flowers? The sight is certainly a rare one, and one not likely to be forgotten. Though the structure of the flower is, of course, quite different, the appearance of them in a mass, as we saw them at Leonardslee, is similar to that of a group of Meconopsis integrifolia, but the colour is more like that of M. punicea. Sarracenia flava and other species were also present, and Darlingtonias; but Sarracenia purpurea was the most effective. From this point a capital view is to be obtained of the house and terrace garden, and some trouble has been taken to make it as attractive as possible.

Coming towards the kitchen garden, we were attracted by a south wall, against which Sir Edmund has planted a selection of the less hardy plants, most of which are already succeeding well. We append the names of some of these:—Bignonia grandiflora, Buddleia Colvilei, Ceanothus Fendleri, C. Gloire de Versailles, C. Veitchianus, Camphora officinalis, Citrus australis, Ephedra altissima, Crinodendron Hookeri, Cinnamomum Loureiroi, Edgeworthia Gardneri, Embothrium rupicola, Lomatia tragophylla, Mandevilla suaveolens in flower and fruit, Grevillea sulphurea, Lagerstroemia indica, Leptospermum grandiflorum, Metrosideros floribunda, Myrtus communis, Olea fragrans, Pueraria japonica, Passiflora, Quillaja saponaria, Rosa sinica Anemone, R. sinica, Solanum crispum in flower, S. jasminoides in flower, Freesia refracta alba and Edwardsia grandiflora.

Our notes have run to a greater length than we intended, so that we shall have to refer only in the briefest terms to the vegetable and fruit gardens. The vegetable garden, being five acres in extent, is one of considerable interest at midsummer as we saw it, and the crops were then very promising indeed. Hardy fruit trees are exceedingly numerous, those of Apples and Pears amount to 500, and these represent as many as 120 varieties. Indoor fruits and tender decorative and flowering plants, also Chrysanthemums, 2,000 Carnations in 100 varieties, Strawberries for forcing, and the other general features of a private garden are successfully cultivated at Leonardslee, reflecting credit on our Calendar writer, Mr. W. A. Cook, but the out-of-doors gardening, particularly the Alpine garden and the shrubberies, are the paramount features.

FRUIT NOTES.

Apples at Sandringham.

The Apple crop in the Eastern Counties is a heavy one this year, and one is not surprised to find an abundance of fruit on the trees in these gardens. There are points in connection with the culture of the trees at Sandringham that are worthy of imitation. For instance, where can larger crops and finer fruit be found of that old favourite Ribston Pippin? The trees are horizontally trained, and are grown against a west wall. The crops are enormous, and the fruit exceptionally fine. Much is made of cordon trained trees in the open; a row on either side of the centre path in the kitchen garden, at the back of the flower border, cannot be short of 300 yards in length. The trees are planted rather thickly together, and they have a distinct lean to the north. Very heavy were the crops and fine the fruit of such sorts as Bismarck, Lane's Prince Albert, Gascoyne's Scarlet Seedling, Schoolmaster (this always does well here), Cox's Orange Pippin, Warner's King, Cox's Pomona, Allington Pippin, Hoary Morning, and Peasgood's Nonsuch. The last-named was very fine; one cordon tree, with stem 6 feet long, carried 22 very large fruits. Trees trained in bush form are largely grown. The branches are trained well apart, which enables the trees to receive an abundance of light and air in their centres. The plants become fully matured, and they furnish large crops of handsome fruit in most seasons. Of the many varieties grown I noted the following as being especially satisfactory: Sandringham was, as is customary here, heavily laden with large, handsome fruits. Originally this variety was found in a game-keeper's garden at Wolferton. Tower of Glamis, Bramley's Seedling, Mere de Menage, Bismarck, Gloria Mundi, Warner's King, Golden Spire, and Chelmsford Wonder, amongst kitchen sorts, were all good. Of dessert varieties Cox's Orange Pippin, Worcester Pearmain, Junes Grieve, Wealthy, Gravenstein, Ribston Pippin, Christmas Pearmain, Writer Ribston, Blenheim Pippin, and King of Pippins were laden with handsome fruits. *E. M.*

Apple Miller's Seedling.

I read with much pleasure and interest (p. 259) the account of, as is stated, the comparatively unknown Apple Miller's Seedling. My late father, James Miller, raised the original tree from a "pip" about the year 1848, at the Speen Nurseries, near Newbury, Berkshire, at which place I was born in 1852. I have grafted thousands of stocks with cuttings from the original tree, and they sold well in the neighbourhood, also in Hampshire.

My father was the second son of William Miller, who established the Speen Nurseries in the year 1820. William Miller died in 1873, and left the nurseries to his son William, my late uncle of Andover and Charlton Houses, who gave them to his son William, who died in 1904, and left them to his son William the fourth, who is now in possession, and he will, in all probability, hand them over to his son William the fifth. The cooking Apple were sent to Highclere Castle before 1866, and I

believe the variety was also supplied to Col. Lloyd Lindsay, at Lockinge, before that date. In 1866 my father left Newbury and bought a nursery business at Lymington, Hants, where he died in 1874. In 1872 he re-named the Apple the Shah, intending to "boom" it under that name, but failing health prevented him from doing so.

I suspect there are some Apple trees in the neighbourhood of Southampton and the Isle of Wight under that name. If so, they are identical with Miller's Seedling. We planted some for Mr. Tennyson, afterwards Lord Tennyson, at Fairfield. It thrives well in the south and west of England, but I rarely meet it here. I have grown it myself, but have none at present. I am not now in the nursery trade, but I may add that good trees can be obtained from the Newbury Nursery, Andover, and Charlton, Hants, or Broad Lane, Lymington, Hants. *Charles H. Miller, Elmhurst, Worcester.*

APPLES AT COPPED HALL.

Just over the border of Middlesex, in the county of Herts, on a very elevated position, is the country mansion and grounds of Copped Hall, the seat of Sir S. B. Boulton, J.P., Bart. Apples are an everyday requirement at this establishment, and Mr. W. M. Wright, who has held the position of head gardener for 17 years, has practically renovated the orchards. Varieties such as Stirling Castle, Lane's Prince Albert, Bramley's Seedling, Mere de Ménage, and Ecklinville Seedling being some of the best of his planting.

The fruit room at Copped Hall is a very simple affair, being merely a lean-to structure 25 feet long by 13 feet 6 inches wide. It is well shelved, and practically the whole of the front can be opened. On entering I noticed the floor of this fruit room was covered with a layer of clean hay, and on my inquiring if there was not a danger of the scent from the hay affecting the Apples, I was informed it had never been known to do so, "but that the cool floor, with the hay, favoured the keeping of the fruits, owing to the atmosphere being less dry." Cox's Orange Pippin appeared somewhat small, and the birds and the wasps had been very busy among them. Blenheim Pippin is largely used for dessert purposes, as there is an abundance of other varieties for culinary purposes. The crop is large, and the fruits are of full size, but a little wanting in colour. King of the Pippins is a very free supply, and the fruits are both clean and of good colour. Ribston Pippin, a good crop, was gathered on the day of my visit. Cellini Pippin, a soft, juicy fruit, but in much request at Copped Hall, is used at the present time for the table. The trees have furnished a heavy crop, but the fruits are much smaller than is usual. Adam's Pearmain, another of the late-keeping dessert Apples, has also furnished a good crop. Fearn's Pippin had been gathered, and was being boxed, some four or five layers in each box, as this variety keeps better when stored in this manner, for it is liable to shrivel if spread out in the ordinary manner. Golden Noble has cropped well, and the small fruits are used for table purposes. This is a very heavy Apple.

Among the culinary varieties Ecklinville has done well, and is now ready for use. Bramley's Seedling proves a very good cropper, and is one of the latest-keeping Apples. Lane's Prince Albert has furnished a very large supply of good fruits. Stirling Castle, a very prolific cropper, is now in season. Bismarck, a heavy, handsomely-coloured fruit, is another favourite in these gardens. Warner's King supplies a fine show, and the fruits are of a good size. Mere de Ménage, though good here in other respects, does not put on a high colour. Emperor Alexander is found a sure-cropping variety. Lodgington Seedling, or Stone's, is a large, handsome fruit. Betty Geeson, a large, first-quality Apple, with a very open eye, also succeeds [illegible]. Hanwell Souring is pretty, [illegible] fruits were small. Striped Beefing, a late-keeping Apple, is a fine crop. Royal Russet is a variety not often seen, but it does well here. Other varieties are grown, but my list comprises the best of the free-bearing Apples that can be depended upon every year. The subsoil of these gardens is a stiff clay. *Stephen Castle.*

GROS COLMAR GRAPE.

As showing the effect of local conditions upon the culture of the above-named Grape, I am forwarding you a portion of a bunch of its fruit. The vine that produced it is growing in the centre of an ordinary hip-roofed or three-quarter-span vinery, with its longest side facing south. Some years ago we trained the leading shoot horizontally directly under the ridge for some 20 feet, which is now furnished with fruit spurs on either side. The continuous ventilator, which is about 2 feet 6 inches in width, on the southern slope, opens directly on to the vine in question. The rod generally carries from 15 to 16 bunches of fruit, averaging, say, 1½lb. each. Every year when fully ripe, they are equal to the sample sent to you, both as to size of berry, colour and flavour. To my taste the latter is equally good as compared with, say, Black Hamburgh, at this time of the year. We have Gros Colmar growing in the ordinary way in other houses, but it never finishes its fruit in the same way as the one in question. This year the crop of fruit is more than the average, hence slight deficiency in colour. *H. J. Clayton, Grimston, Tadcaster.* [The berries were of unusual size and colour, and the flavour delicious, which is very unusual in this variety. Ed.]

The Week's Work.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Souvenir de la Malmaison Carnations.—In order to have good plants for next season's flowering much depends on their care and management during the next few months. They should be given a place as near to the roof glass as is possible and consistent with safety from extreme cold; above all, avoid overcrowding the plants on the stages. Should the weather continue mild, lose no opportunity to ventilate the structures freely, both at the top and the sides during the day, and allow a free circulation of air at night time from the wall ventilators. Damp is far more injurious to these plants than actual cold, and is conducive of the dreaded disease rust. As a preventive against this fungus the plants should be sprayed on the under surfaces of their leaves with "carvita" at least once a fortnight, using the same a little under the strength given in the directions. A little warmth may be circulated in the pipes to dispel excessive moisture, but avoid extremes of temperature, which should range from 40 degrees to 45 degrees during the winter months. Water should be afforded only when the plant requires it, and then give a thorough soaking.

The Fernery.—Growth in Ferns will soon become inactive, and by decreasing the atmospheric temperature the plants will be brought to a complete state of rest, which will promote greater vigour in the plants when the season of growth again commences. A temperature of 55 degrees to 60 degrees will suit most varieties of stove Ferns during the winter months. If thrips have been troublesome, the present time affords a good opportunity to take strong measures to eradicate these pests by fumigating the structure two or three evenings in succession with the XL All vaporiser. The matured leaves of Adiantums and other varieties are not so readily injured as are the young fronds when they are unfolding. Previous to fumigating, the plants should have many of the old disfigured fronds removed, as by this means many of the stronger insects which would probably survive fumigation will be destroyed. A. Farleyense and also the Gold and silver-coloured Gymnogrammas should be wintered in a temperature of 62 to 65 degrees, for they are liable to suffer from damp when grown in a low temperature.

General work.—Have all materials used for protecting pits and frames ready, so that in case of a sudden frost they can be easily applied. New Archangel mats should not be used until the ends have been trimmed and tied; this will afford employment under cover on wet days.

Chrysanthemums.—Now that the plants are housed, and before they develop their blooms, a gentle fumigation should be given. Greenfly, if present, readily establishes itself in the florets. Bush-trained plants should be disbudded, leaving only three or five good-formed buds on each growth.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Strawberries in pots.—The weather during the past month has been favourable for the growth of Strawberries, and also for the ripening of their crowns, which is important, especially in the case of plants intended for early forcing. Remove all runners from the plants and any weeds from the pots, and turn the latter round to give a check to any roots that may have grown through the bottom into the ash-bed. All small and weakly side-crowns should be removed, especially from the earliest batch of plants. Stand the pots well apart until they are provided with protection for the winter, to permit a good circulation of air between them.

Vines.—Vines which have been inarched should have the portion of the grafted variety below the union permanently removed when the foliage has fallen.

Late Melons.—Fruits that are not yet ripened on late plants should be given every encouragement possible to finish, by closing the house very early in the daytime, and by damping the walls and the paths, for this will be of greater value at this time of the year than syringing the foliage. Give the plants root-waterings sufficient only to prevent them from flagging. These later fruits are usually small, but they are most useful for furnishing an extra dish for the dessert table.

Muscat Grapes.—The bunches should be frequently examined, and all decayed berries should be removed, or they will soon cause further decay. Leaves should be picked up as they fall. Examine the border, and do not allow it to become dry; give sufficient water to prevent shrivelling of the berries, and afford a good soaking after the Grapes have all been cut.

Pot vines intended to produce the earliest crop of Grapes should now be pruned, and, if the rods bleed when cut, apply a little styptic over the wounds. Thoroughly cleanse the rods with a little soft soap and water, and keep them at rest in the coolest place possible, which will also have the effect of making them grow more readily when they are placed in the forcing house. Even if the vines are kept outside, it will be all the better for them later on, so long as the roots do not become saturated by heavy rains, but this can be obviated by placing a few slates over each pot.

Tomatos.—Plants that are in bearing will be benefited by keeping the foliage thinned out, to allow plenty of light to reach the plants. Ensure fertilisation by artificial pollination, and keep the atmosphere of the house in which they are grown rather dry and warm. Fruits on plants that are still growing in frames should be hastened on by keeping the atmosphere of the frames a little closer and warmer. Plants in pots for winter use should be kept growing steadily, and when sufficient fruits have formed on a plant a little artificial manure may be given. Outdoor Tomatos have done well this season.

THE FLOWER GARDEN.

By Hugh A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

The Renovation of the Rosary.—Having in last week's notes offered some suggestions on the formation of new rosaries, it may not be inappropriate this week to offer a little advice on the successful maintenance of existent rosaries—or beds of Roses. It must be obvious to everyone who has had experience of Rose culture, that, given the best of conditions as regards site and soil, the plants after four or five years in the same ground commence to deteriorate, notwithstanding they are afforded liberal "top dress-

ings" and applications of manure water. The reason of this is not far to seek. Roses, like other plants subjected to high cultivation, require a change of soil. In very many instances they are made to grow for years in the same ground, and too often this is accompanied by applications of heavy moisture-holding mulchings of manure during the autumn and winter months, which cause the soil to become cold and sour, and prove detrimental to root action. The inevitable result of such procedure is that the plants gradually become sickly and poor.

Need to lift and replant.—In a rosary that has been permanently planted for some years the best thing to do is to lift all the Rose plants now, and after cutting away rank-growing roots, to plant them again carefully, though it may be closely together, in some good soil in a sheltered part of the kitchen garden, where they can remain until the spring. In the meantime the beds in the rosary can be thoroughly trenched and supplied liberally with farmyard manure, for manure in the soil is of far more benefit to the roots than when on the surface, excluding as it does sunshine and the atmosphere. By the spring the soil in the beds having been thrown up to become pulverised during the winter time will have consolidated and be in the best of condition for planting. The Rose plants in the kitchen garden will have made some useful fibrous roots, and be ready for making a fresh start in their old quarters. When planting in the spring, some fibrous loam should be supplied to the roots to induce quick root-action. For Rose beds which have not been so long made and planted, and in which the plants are not yet showing signs of the need of lifting and change of soil, it will be sufficient to give the surface a dressing of lime, or, better still, a dressing of basic slag. The latter would supply the purpose of lime in making the manure already in the soil available for assimilation by the roots, and at the same time provide a phosphatic manure which is always beneficial to flower-producing plants. To ensure an effect next season, it is important to bear in mind that basic slag must be applied early in the winter, because its action is slow.

Very old beds should be cleared out.—In rosaries where the beds have been an old institution, and the soil has become partially poor, the best remedy would be to remove all the old soil, and entirely replace with fresh loam; a proceeding which certainly entails much labour and expense, but which never fails to repay by the re-invigoration of the plants in the years that follow.

If it is necessary to follow the time-honoured custom of mulching Roses in the winter, as a protection against hard frost, then let it be done with some light, sweet material, but not on any account with the ordinary heavy and wet muck so often used.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Leeks.—The earliest plantation for the main crop will have made good growth by this time, the stems being well above the surface of the soil. Draw the earth up to these to increase the blanched portion. Late exhibition Leeks will not now require further blanching. Take care that any paper collars that are used are kept on a level with the soil, otherwise a partially blanched stem will be the result, and this is all against full points. No more feeding or water will be needed after this date, as the rainfall after October is usually sufficient to meet their requirements. Any plants showing signs of "bolting" to seed should be pulled up and sent to the kitchen.

Peas.—Where the practice still exists of sowing Peas in the autumn, a sowing should be made towards the end of the present month on a warm, sheltered border, where the subsoil is moderately light. It is only in gardens that are favourably situated that a sowing should be made at this season, and generally the practice is not to be recommended. When one considers the risks of failure of such seeds, together with the fact that plants raised indoors in the early months of the year will yield a crop almost, if not quite, as early as autumn-sown seeds, and occasion far less trouble than those, there is little wonder that the method is fast dying out. The varieties William the First and Ringleader are round-seeded, and are likely to succeed the best of those sown in autumn. In no case should the more tender Marrowfat varieties be selected, as they will not stand so well the excessive moisture and sudden changes in the state of the weather.

Turnips.—As fast as the autumn crop becomes fit, the roots should be stored together in a pit in readiness for use. It is a mistake to leave these fully-grown roots in the ground, as they are liable to become rotten and woolly in such conditions. The hardier sorts, however, are exceptions, and suffer little harm, such as Golden Ball and Chirk Castle. Where garden Swedes are grown, these may be left in the ground for a little longer. It is surprising how seldom gardeners grow these roots, and yet few vegetables are more appreciated as a change in winter. There is a vast difference between the quality of the ordinary field varieties and the selected garden strains, the latter having much the finer flesh, and they are not so "gritty."

Red Cabbages.—Seedling plants intended to stand the winter out of doors for next year's supply should be pricked off closely together on a border, but this practice is not to be recommended, because, as with Peas, it is possible to obtain from an early sowing under glass a crop quite as early, and one that is freer from risk of failure. The present year's crop, now at its best, should be made use of for pickling before the "heads" burst, which they may do at any time after this month is past.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Fruit gathering and storing.—If Apples and Pears are gathered and selected with care the work in the fruit-room later will be considerably reduced. All varieties stored should have a neat label attached to them. At the present time several varieties of Pears are ready for use, and if not consumed will deteriorate rapidly. Pears should be kept in a cool room till just before they are wanted, when they should be taken to slightly warmer quarters. A Pear is nicer when eaten with the chill off. The varieties Beurré Hardy, Comte de Lamy, Louise Bonne of Jersey, Gansel's Bergamotte, Beurré Superfin, Conseiller de la Cour, Emile d'Heyst, Triomphe de Vienne, etc., all ripen during October, but they can be retarded somewhat by keeping them in a very cool place. Really good dessert Apples are not plentiful during October, but there are several comparatively little-known sorts that are of good quality. Among these is St. Edmund's Pippin, an Apple of very agreeable flavour, and with skin covered with a greenish-brown russet and patches of yellow. The flesh is yellow, very juicy, tender, and has a rich aromatic flavour. Wealthy is a very handsome Apple, being coloured dark red on the side next the sun. It is also juicy and rich-flavoured. The tree is a prodigious cropper. Cornish Aromatic is a beautiful, juicy and highly aromatic Apple, an old and valued variety. American Mother is also in season during October, and this is another very fine dessert variety, being rich, juicy, and aromatic. Rival seems destined to become a popular dessert fruit, and ripens in the present month. All these varieties succeed well grown as bush and pyramid-trained trees.

Peach and Nectarine trees.—As soon as the late varieties are cleared of their fruits cut out any of the fruiting wood of the current year that is not required. This will help to strengthen the growths that are left, and will allow the sun's rays to enter the trees. It is not too late to water trees on a south wall. If the trees are dry, or partially dry, give a thorough watering, such as will penetrate to all the roots; at the same time give the foliage a good cleansing with clear water. Out-of-door Peaches are not of much value after this date, as the cool, long nights destroy the flavour. The remaining fruits outside should be brought into a warm house. The earlier trees should have a birch broom passed over them lightly to dislodge any loose foliage, so that the sun's rays can shine on every portion of the trees.

The Loganberry.—If not pruned already, the fruiting branches of this bramble should be cut away, similar to that of the Raspberry, and the new growths be strung up. Wilson Junior is a very good variety of Blackberry. It produces long, handsome berries, and if the soil suits it, does remarkably well and fruits heavily. The common Blackberry, when liberally treated, will also yield a good return in the matter of fruits. The Cumberland blackcap or Rubus leucodermis has small and pretty fruits that look well in the shrubbery, and white stems, from which it has received the name of the White-washed berry. The plant has no economical value.

General work.—Trench ground intended for new fruit quarters, mixing plenty of lime-rubble with the soil. Remove all runners from newly-planted Strawberries, and keep the soil about them clean and free from weeds. Continue to lift and root-prune all trees that require these operations. Bush trees may be planted now, and with better results than when practised later.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Cypripediums. — Plants of Cypripedium Spicerianum, C. Charlesworthii, C. Leeanum, C. Fitzus, C. Arthurianum, C. Actæus, C. radiosum, C. insigne, and its numerous varieties, and other species occupying a comparatively cool position in the intermediate house will now be fast sending up their flower spikes, which will require to be carefully guided through the leaves, or some of them may become displaced by the foliage and grow distorted. Care should be taken when inserting the sticks not to injure the growths, especially where they are crowded, or the roots more than is avoidable. The flower stems should be tied loosely to the sticks, so that the spikes as they lengthen shall not be restricted. Strong, well-rooted plants of these Cypripediums that are producing their inflorescences should be well supplied with water at their roots, and they will be greatly benefited by an occasional application of weak cow manure water until the flowers open. Well damp the spaces between the pots at least twice a day.

Calogyne cristata and its varieties should be encouraged to finish the development of strong-flowering pseudo-bulbs. Elevate the plants well to the light, and afford them an abundance of water till the flower-spikes appear, after which the amount of moisture given should be gradually reduced.

Zygopetalums.—The genera Bollea, Pescatorea, Huntleya, Warscewiczella, &c., are now included under Zygopetalum. These plants are now growing freely, and should be watered copiously overhead two or three times weekly. They must never be allowed to become really dry, and the atmosphere around them should be kept at saturation point. Notwithstanding all this dampness, a small species of red-spider often times attacks the under surfaces of the foliage, especially if the plants are subjected to high temperatures provided by artificial means, therefore, a periodical use of the sponge is necessary. These plants do not appreciate a high temperature for long periods together; a mean temperature of about 60 degrees is better suited to them. This year, in addition to the ordinary shading, we painted the glass immediately above these plants with a mixture of flour and water, under which shading they made considerable improvement. If, during winter, the night temperature of the house is likely to fall much below 60 degrees, the plants should be removed to a suitable position in the East Indian house, but it must be one in which the direct rays of the sun cannot reach them.

Cattleyas.—The present is a critical season for some of these Orchids that are finishing their growth, including C. Trianiæ, C. Mendelii, C. Mossiæ, C. labiata, C. Dowiana, C. D. aurea, &c. It may happen in damp weather, especially in low-lying districts and in houses that are insufficiently ventilated, that the sheaths enclosing the new pseudo-bulbs become almost transparent, and sometimes of a dark colour; particularly is this the case with C. labiata. When this is observed the involucres should be at once slit open, or decay may ensue in the pseudo-bulbs. Should a plant become thus affected through excess of moisture at the root it will, of course, be constitutionally impaired, and should immediately be placed in a drier position, and as near to the roof glass as is possible. To prevent such decay occurring in the sheaths and pseudo-bulbs, [illegible]

EDITORIAL NOTICE.

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Oct. 20	German Gardeners' Soc meets.
TUESDAY,	Oct. 23	Royal Hort. Soc. Com. meet. Exec. Council of British Gardeners' Assoc. meets 4 p.m.
WEDNESDAY,	Oct. 24	Royal Hort. Soc. of Ireland's Great Fruit & Chrys. Show in Ball's Bridge, Dublin (2 days).
THURSDAY,	Oct. 25	Manchester & N. of England Orchid Soc. meets.
SATURDAY,	Oct. 27	Dutch Gardeners' Soc. meets.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty three Years at Chiswick—48·4°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, October* 17 (6 P.M.): Max. 62°, Min 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, October* 18 (10 A.M.): Bar., 29·8, Temp., 60°. *Weather*—Fine.

PROVINCES.—*Wednesday, October* 17 (6 P.M.): Max. 58° Southampton; Min. 41 North Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY TO FRIDAY
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30

MONDAY AND TUESDAY—
Indoor and Outdoor Nursery Stock, Statuary, &c., at 489, King's Road, Chelsea, by order of Mr. J. H. Stone, by Protheroe & Morris, at 12.

MONDAY—
Nursery Stock at The Nurseries, Bellingham, by order of Messrs. J. Laing & Sons, by Protheroe & Morris, at 12.
Sale of Bulbs, Plants, &c., at Stevens' Rooms.

TUESDAY
Clearance Sale of Fruit Trees at Farley and Elms Farms, Cheshunt, by order of Messrs. T. & G. Oyler, by Protheroe & Morris, at 12.

WEDNESDAY—
Clearance Sale of Nursery Stock at The Field House Nursery, West End, Esher, by order of Messrs. Thirtle Bros., by Protheroe and Morris at 12.
Palms, Plants, Azaleas, &c., at 67 & 68, Cheapside E.C., by Protheroe & Morris, at 5.
Sale of Bulbs, Roses, Plants, &c., at Stevens' Rooms.

THURSDAY AND FRIDAY—
750,000 Conifers and other stock at Hodamby's Nurseries, Groombridge, near Tunbridge Wells, by Protheroe & Morris, at 11.30

Our Herbaria.

Professor F. W. Oliver's address to the Botanical Section of the British Association at York, some portions of which have been published in our columns, has not been allowed to pass unchallenged. The first portion contained a most interesting summary of what is known and of what is inferred of the history and gradual development of the seed. Read in connection with Dr. Scott's memoir on seed-structures in plants which had till now been considered as of Fern-like affinity, it serves to give a clear account of what is now passing in the minds of those whose studies are devoted to these recondite subjects. The second half of the address had reference to the rise and progress of the "new school" of botanists, and to the future destiny and use of herbaria. In the September number of the *Journal of Botany*, Mr. James Britten repudiates the views as to the function of our great herbaria held by the professor. It is quite true that the study of botany has undergone a very great change during the last half century, and equally true that the change has been highly beneficial in extending the bounds of knowledge and in directing attention to departments previously neglected. But whilst this is incontrovertible there is something to be said on the other side. The laboratory pupil, if for distinction sake we may so call him, quits his table much better equipped in certain limited departments than his predecessor did, but whether he is likely to prove a better all-round botanist, using that word in its most comprehensive sense, has yet to be shown. Professor Oliver, in his address, speaks depreciatingly of our two great herbaria, because they are not associated with any particular teaching institution. But, surely, like great libraries, they are at the disposal of all, and if the "schools" do not make use of them, so much the worse for the schools. A herbarium fulfils the purpose of a vast book of reference, and if the "student" does not make use of the resources at his disposal, it is he who is the loser. Doubtless there is something to be said in favour of the association of a teaching staff with our museums. Such collections, for instance, are not half as much appreciated as they might be, for want of a teaching staff in addition to the conservators. The example of our hospitals is sufficient to show how much their efficiency and their progressive development are secured by association with a teaching body; so if the botanists of the modern school were made practically acquainted with the work done in the herbaria, they would soon cease to regard those collections in the light of "scrap-heaps."

The preparation of an important monograph of any group, with all the research that it entails, all the careful comparison, weighing of evidence from all sources, and judgment that it necessitates, is surely better calculated to make a man a "botanist" than any amount of specialised laboratory work, however important it may be. For the compilation of such a monograph a garden is most desirable, but its resources are not available at all seasons, so that the herbarium becomes essential.

Again, the practical applications of botany are assuming such large proportions that there is no fear of our herbaria languishing from disuse, as the professor seems to fear, for it is to the herbaria that we must turn for the identification of useful plants of all descriptions; it is to them that we must look for information as to the localities in which they grow, and the climatal conditions under which they flourish.

The facts are so obvious that we need not do more than mention the services which the herbaria render to horticulture. In fact, as gardeners, we cannot dispense with either the botanist of the old school or the student of the new. It is as important for us to know the life history of a Dandelion, as revealed in the laboratory, as it is to know the conformation and all that depends upon it of the Welwitschia, to adopt the illustration used by the professor. Both may seem remote from the practical, everyday work of the ordinary gardener, but as regards the extension of that knowledge on which ultimately all good practice must depend, it is certain that we cannot afford to neglect any increase of knowledge.

In spite of what the professor enunciated, we should not have thought that any "defence" of our great herbaria was necessary—certainly it is not required by those who are in the habit of consulting them, but if the "schools" require information on this head, it may be well to subjoin what Mr. Britten has to say on the functions and uses of a herbarium.

"A public herbarium fulfils a variety of purposes with which the 'schools' have, and can have, nothing to do. At the National Herbarium, for example, the botanical history of the last two or three hundred years can be traced; the types of Linnean species, of the early American collectors, and the great Sloane Herbarium are therein preserved; and so far from showing any signs of becoming 'obsolete,' they are constantly consulted by botanists from all parts of the world, both by personal visits and by correspondence. Apart from these, the student of the British flora, the amateur botanist, the horticulturist, the elementary teacher, and the intelligent inquirer find the herbarium a convenient centre for prosecuting their studies, and for obtaining information which they could not readily obtain elsewhere. If Professor Oliver's ideal were realised, botany would become the sole possession of the schools; and not only the foreign systematist, but the general public, the private student, the amateur, and the monographer would be excluded from consideration. The National Herbarium and that at Kew are supported by public funds; it is, therefore, manifestly but common justice that the public rather than the schools should have the prior claim to their services."

GILIA CORONOPIFOLIA.—The illustration on page 277 of the present issue will serve to draw attention to a plant that has long been cultivated in gardens, but is not so well known at the present day as its merits justify. A description of the flowers as shown by Messrs. G. & A. CLARK, LTD., Dover at a meeting of the Royal Horticultural Society on August 28, was published on page 169 of our issue for September 1, and the growing plants are referred to in an article on this nursery on page 280 of our present issue. Messrs. CLARK inform us that the plant is a biennial, the seed of which, if sown in May, will produce flowers in the July of the following year. The plants grow to a height of 3½ to 4 feet under the best conditions, and produce flowering spikes about 2 feet in length.

ROYAL HORTICULTURAL SOCIETY.—The Society's annual general examination in the principles and practice of horticulture will be held on Wednesday, April 10, 1907. The examination will be held simultaneously in as many different centres in Great Britain and Ireland as circumstances may demand. The Society is willing to hold an examination wherever a magistrate, clergyman, schoolmaster, or other responsible person accustomed to examinations will consent to supervise one on the Society's behalf. A copy of the syllabus may be obtained by sending a stamped and directed envelope to the Society's offices. Intending candidates should send in their names not later than March 16. A scholarship of £25 a year for two years is offered by the Society in connection with this examination. Copies of the questions set at the examinations 1893-1905 may be obtained from the Society's offices, Vincent Square, Westminster, S.W., price 1s. 9d., or 10s. per dozen. H. School Teachers' Examination.—The Society will hold an examination in cottage and allotment gardening on Wednesday, April 24, 1907. This examination is intended for, and will be confined to, elementary and technical school teachers. It has been undertaken in view of the increasing demand in country districts that the schoolmaster should be competent to teach the elements of cottage gardening. The Society's certificate will be issued after the examination to all who shall, in the judgment of the Council, have shown sufficient acquaintance with a knowledge of the subject to

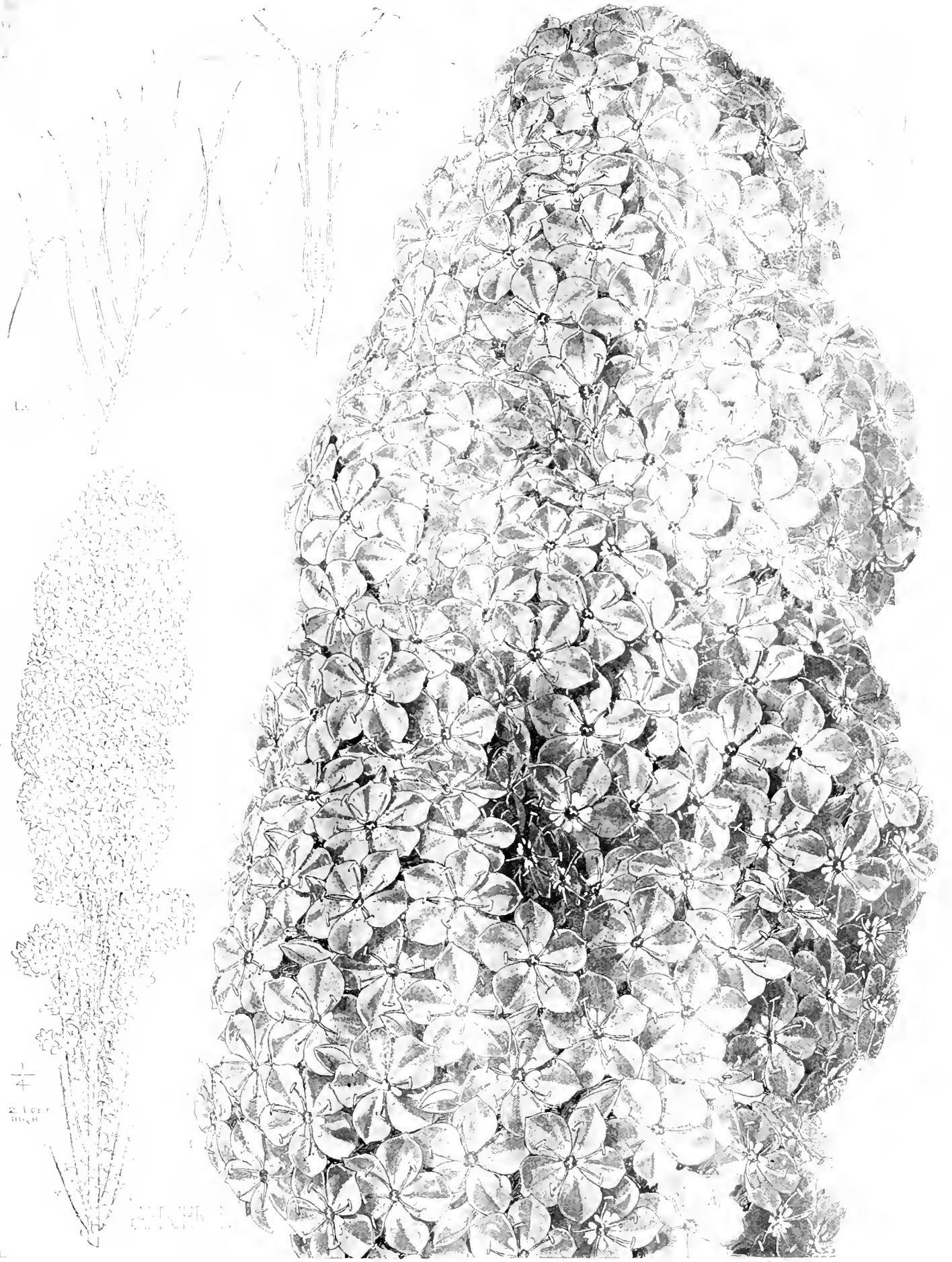


FIG. 111.—GILIA CORONOPIFOLIA, A HALF HARDY BIENNIAL WITH SCARLET FLOWERS.

(From a specimen received from Messrs. G. & A. Clark, Dover. Slightly enlarged.)

warrant their teaching it to their scholars. Teachers and assistants desiring to sit for the examination should apply at once for a copy of the syllabus to the Royal Horticultural Society, Vincent Square, Westminster. A stamp should be sent to cover postage. The general conduct of this examination will be on similar lines to that of the more general examination. III. Public Parks Examination.—This examination is specially intended for gardeners employed in public parks and gardens belonging to county councils, city corporations, and similar bodies, and will be held on Monday, January 14, 1907, in the Royal Horticultural Society's Hall, Vincent Square, Westminster, S.W. The examination, which will commence at 10 a.m., will be partly written, partly viva voce, and will occupy three hours for the written portion, and about 20 minutes each candidate viva voce. A syllabus, with entry form attached, can be obtained on application to the Secretary, R.H.S., Vincent Square, Westminster, to whom intending candidates should send in their names not later than Saturday, December 29, 1906, but before if possible.

——— —The next meeting of the Committees will be held on Tuesday, October 23, in the Society's Hall, Vincent Square, Westminster. A lecture on "Horticultural Education" will be given by Mr. F. J. BAKER, at three o'clock.

THE SCOTS PINE SHEDDING ITS LEAVES PREMATURELY. We have received the following letter from our most highly valued correspondent, Sir JOSEPH HOOKER:—"During September last the Scotch Pines around my house shed their young leaves in profusion, covering the paths under them with a carpet of the tenderest green. Very few, if any, old leaves fell with them. The Pines are self-sown, growing on a slope, in sandy, gravelly soil, with a little peat, together 1 to 2 feet deep, over a hard pan. The oldest trees average 80 years. I should be glad to know if this phenomenon has been observed elsewhere, as it was due, no doubt, to previous drought." *Jos. D. Hooker, The Camp, near Sunningdale, October 12, 1906.*

FLOWERS IN SEASON.—We have received flowers of a large number of beautiful varieties of garden Pentstemons from the well known hardy plant nursery of Mr. JOHN FORBES, Hawick. The great improvement effected in this flower in recent years is remarkable, and it is now quite one of the best subjects for the flower garden in summer-time. Such a selection as Mr. FORBES sends us affords a very wide range of colours, but the scarlet flowers and those of shades approaching to that colour are the most attractive, and these, planted in groups in the borders or in beds by themselves, such as we recently saw them in the old flower garden at Golder's Hill, form quite a beautiful feature. The varieties John Lamont, George Home, and Lady Arthur are all of this colour, their principal difference being in the amount of white found in the throat.

ROTHAMSTED.—A very useful guide to the experimental plots at the Rothamsted Experimental Station, showing the nature and method of the several experiments and the general results, is published at the cost of one shilling by Mr. JOHN MURRAY, Albemarle Street. This summary should be in the hands of all cultivators who can turn the lessons it teaches to good account.

MR. RICHARD LOWE. In recognition of his many services rendered to Horticulture, a fund is being raised in the neighbourhood of Wolverhampton to assist Mr. RICHARD LOWE in his old age. Mr. LOWE has been in business for sixty years, and has devoted much of his time in disinterested efforts to promote horticulture and the welfare of his fellows. An influential local committee has been formed, and Mr. W. JOHNSON, manager of the Metropolitan Bank, Wolverhampton, has consented to act as treasurer, to whom donations may be sent, or to Mr. TOM B. DOBBS, 32, Queen Square, Wolverhampton.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1906-1907 will be held on Monday, November 12, 1906, at 12, Great George Street, Westminster, when the president, Mr. GEORGE LANGRIDGE, will deliver an opening address. The chair will be taken at 8 o'clock.

WELBECK ABBEY GLASSHOUSES.—The Duke of PORTLAND is having a considerable section of the glasshouses at Welbeck renewed and modernised. The new work includes: span corridor, 280 feet by 16 feet; three span plant houses, each 43 feet by 20 feet; six span houses, each 37 feet by 12 feet; span Carnation house 60 feet by 12 feet; also a lean-to range comprising three Fig houses and two vineries, 300 feet by 15 feet. The work of erecting the new houses has been entrusted to Messrs. MESSENGER & Co., Ltd., the well-known horticultural builders, of Loughborough and London. Last year Messrs. MCKENZIE & MOORE built a very large fruit range in these gardens.

THE KRUPP WEDDING.—It is interesting to note that Messrs. CHARLESWORTH & Co., Heaton, Bradford, supplied the whole of the Orchid flowers for the decorations at Hugel a. d. Ruhr. Over 100 sprays of Odontoglossums, 1,000 Laelio-Cattleyas, 500 Cattleya Labiatas, and hundreds of spikes of such things as Oncidiums, Vandas, Phalænopsis, Cymbidiums, &c., &c., were supplied. This is the second large order this firm has received from Germany, the previous one being for the silver wedding of the Emperor WILLIAM a few months ago.

THE GOELDI MUSEUM, BRAZIL. We note the publication of the *Boletim* of the Goeldi Museum, Para, Brazil, which includes the following articles: Materials for the Flora of the Amazon, by Dr. J. HUBER, and Synopsis of Species of the genus Hevea, by Dr. J. HUBER. The papers are in Portuguese, but the "Flora" includes descriptions in Latin of the species enumerated.

POTATO. A "Potato Demonstration" was held on Saturday, September 29, under the auspices of the Edinburgh College of Agriculture, special facilities having been afforded by Mr. SCARLETT. Among the salient results is the disappointing behaviour of Eldorado, the price of which, a few years back, was £160 per lb.! Respecting this, we take the following extract from the *North British Agriculturist*. "In addition to the College exhibits at the 'Show,' the Messrs. SCARLETT exhibited a fine selection. One of their exhibits was interesting by way of showing the results of 'express culture,' of which the potato-growing public heard so much a couple of years ago when Eldorado were selling at £160 per lb. This particular exhibit showed a 'root' of Eldorado grown from 'seed' which had been produced in a natural way by ordinary culture, while alongside it was another Eldorado 'root' produced from 'seed' grown from tubers which had been grown from 'shoots,' by the system of 'express culture.' The result was that the 'root' produced from tubers that had been grown in a natural way showed a very fair yield, whereas the 'root' grown from the tubers that had been produced by 'express culture' consisted of only eight tubers of about the size of marbles. Dr. WILSON showed eight new hybrid varieties of his own raising. Four of these were raised in 1902, and four in 1905, so that four of these hybrids had stood the test of four years' cultivation. One of these was named Rector, a ruddy-skinned maincrop of medium size and excellent quality. It was guaranteed as having stood the test of four years' field culture without even showing a trace of disease. Another named Prior was an oval white second early, which was guaranteed a fine cropper of excellent quality. A third was Kate Kennedy, which was a lineal descendant of British Queen, and the fourth was Bejeant, a fine-looking net-skinned yellow-fleshed kidney, a good cropper, and of the best quality. The four seedlings were the second year from the berry. One of them was the first year's seedling which produced 6 lbs. of tubers last year—within ten months of being raised from the berry. Another of the four was a very attractive rough-skinned pinkish round. The four were specimens selected from over 230 seedlings."

THE POTATO CROP IN IRELAND.—We are sorry to find our bright Irish contemporary, *Irish Gardening*, confirms the reports that have reached us as to the exceptionally bad prospects of the Potato crop in the sister isle. In certain of the western districts the crop is "practically wiped out of existence." Early and repeated sprayings are insisted on as preventives.

ENGLISH GARDENERS IN AMERICA.—We are constantly struck, in perusing the American journals, by the number of nurserymen of British extraction who have made their home in the United States. Of course, this is not very surprising in itself, but what is remarkable is that, with the exception of a comparatively few who have what we may term a cosmopolitan reputation, we hear so little in the old country of what the gardeners of British extraction are doing in their new home, which after all is not like a foreign country, but is only an offset from the old stock, language, literature, religion being the same. We take the following interesting details from the *Weekly Florists' Review*:—"JOHN H. SMALL, senr., the pioneer floral decorator of Washington, D.C., was born at Watford, England, in 1826. He inherited horticultural tastes from both his father's and mother's parents. His paternal grandfather was the owner of a nursery at Colnbrook, England, and leased for 10 years Cliveden, the present home of W. W. ASTOR, on part of which he conducted a nursery, in connection with his business at Colnbrook. Mr. SMALL's maternal grandfather was a Welsh gardener, an authority in his day. Mr. SMALL received his training both with his grandfather and at Frogmore, Windsor. While at Frogmore he saw much of the early married life of QUEEN VICTORIA and the early childhood of the present KING OF ENGLAND. He has also vivid recollections of the Duke of WELLINGTON, hero of Waterloo, as he rode to and from Windsor. Many years ago, antedating the Civil War, Lord LYONS was British Minister at Washington. He was a lavish entertainer, and had imported wax flowers and fruits from Paris for table-decorations. Mr. SMALL persuaded him to give up the waxwork for natural flowers, which he furnished at a financial loss to himself for the time being, but in thus turning the tide of fashion to natural flowers he conferred a great boon on American horticulture."

THE MAINTAINING OF MOISTURE IN ORCHID HOUSES. In an article descriptive of the new Botanical Garden at Dahlem, mention is made in *Die Gartenwelt* for September 22, of the method of affording atmospheric moisture in the Orchid houses recently erected there. As is usual in most span-roofed houses the central stage is arranged in tiers of steps or shelves, and at the sides the usual flat benches. The whole of the staging and benches have an extra platform of wood beneath them, on which are placed porous bricks, pierced with holes, which, by being saturated with water, are capable of maintaining the air of the house in a desirable state of moisture for a considerable length of time. With the same intent, the paths are laid with hard bricks, having channels between them for holding water, that run lengthwise of the paths; a more economical method than wooden gangways.

Flower Gardening at Battersea. The Battersea Borough Council, with a view to encouraging the cultivation of flowers and plants by the tenants of their houses and tenements (351 in number) on the Latchmere and Town Hall Estates, recently held the third competition, with the co-operation of the Battersea and Wandsworth Amateur Chrysanthemum and Horticultural Society, for the best kept outdoor and indoor flower, &c., gardens. The competitors were divided into two classes, as the tenants on the upper floors are provided with gardens away from the houses, whilst the gardens for the ground floor tenants are immediately adjacent to their houses. The number of competitors totalled 34. The presentation of the prizes, &c., by the Mayoress (Mrs. W. Rines) is to be made the occasion of a public meeting, to be held in the small hall at the Latchmere Road Baths (Burns Road entrance), on Friday, October 26, 1906, at 8 p.m.

An Effectual Cure.—We take the following from the *Florists' Exchange*: "A farmer who was much troubled during the nutting season by trespassers in a wood bordering the roadside, ascertained from a botanical friend the scientific name of the hazel, and caused the following notice to be put up in the wood:

Trespassers Take Warning!
All Persons entering this wood do so at their own risk, for the
Corylus Avellana
abounds here in company with more or less poisonous snakes!

The wood is now shunned by everybody, and the farmer is so pleased with the success of his ruse that he thinks of seeing his botanical friend again to find out the Latin name of the common, edible field mushroom." There is another side to this matter. It is quite possible that some persons might be attracted by the intimation, even if couched in botanical language, that "nuts" were to be had in the wood. We remember a similar case where this announcement was made "Scolopendriums and Polypodiums set here." The effect in this case was to induce certain plant lovers to transgress the law of trespass in the hope of finding Ferns, but, alas, they only existed on the notice board, and there only in name.

How to Buy a Business.—By A. W. Bromley. (London: T. Fisher Unwin, Adelphi Terrace).—This is described as being a guide to the purchase of retail and other businesses, professional practices, etc., and it has a supplementary chapter on partnerships. It should prove handy for reference to all who require the advice given in it. This, briefly speaking, is to make as good a bargain on all occasions as is possible, and all that the writer says bears out the maxim that "the buyer has need of a hundred eyes, the seller has need of but one." The author certainly gives timely warning in exposing the tricks to which those who have a business and stock to sell sometimes resort. No reference to any particular class of trade is made, as the same rules are applicable when purchasing any property.

A Botanical Museum.—In the great hall of the Natural History Museum at South Kensington something is done to illustrate the relations of morphology and physiology, and if this plan were more fully developed, taking for illustration Kerner's *Natural History of Plants* as a nucleus, there is little doubt that the study of scientific botany would be materially promoted. Illustrations bearing on Mendelism and de Vries' views on mutation would be useful to those desirous of acquainting themselves with the current of modern botanical thought and observations. A series of specimens illustrative of the "improvement" of garden flowers would be of great interest. Take, for instance, the tuberous Begonias, of which the original species should be shown in effigy, if not in the form of dried specimens, together with the latest developments which are so different from the original type that a new genus has even been proposed for them. Dahlias, Fuchsias, Chrysanthemums, Gladioli, and numerous other genera might be treated in like manner, and would assuredly be of great value to the students of evolution. At present they are looked on as decorative objects only, and as of no value for scientific purposes, but it is obvious on consideration that they might be made to serve a much higher and more permanent purpose.

Specific Names.—At the Botanical Congress held in Vienna last year the following "recommendation" was made that all specific names should be written with a small initial letter, except those derived from the names of men or women (whether used as substantives or as adjectives), or those which represent the names of old genera (substantives or adjectives), thus: Ficus indica, Brassica Napus (Napus being a name of an old genus), Phyteuma Halleri, Malva Tournefortiana. In this way the confusion engendered by the recent practice of spelling words derived from the names of persons in two ways, according as they are used as substantives or as adjectives, is abolished, and all personal names, whether substantives or adjectives should be spelt with a capital letter, thus: Rosa Hookeri or Rosa Hookeriana. It is generally understood that the substantive form implies that the person whose name is connected with a species has been connected with its discovery, its description, or in some other way; whilst the adjective form *anus*, or, in the feminine, *ana*, is purely complimentary.

Lectures on Agricultural Biology at Royal College of Science, Ireland. Mr. D. Houston will give a course of lectures in the Royal College of Science, St. Stephen's Green, under the auspices of the Dublin Seed and Nursery Employees' Association. The subjects are as follow: October 11: I. The Micro-organisms of Soils, and their influence upon fertility. October 18: II. Parasitic Fungi in relation to the Health of Plants. October 25: III. Sexual Reproduction in Plants; "Laws" of Heredity. November 1: IV. The Natural History of Conteræ. November 8: V. Liliaceous Plants as representing the great group of Monocotyledonous Vegetation (or Amaryllidaceous Plants). November 15: VI. Rosaceous Plants as representing Dicotyledons. November 22: VII. Geographical Distribution of Plants.

Commercial Research in the Tropics.—The Institute of Commercial Research in the Tropics, connected with the Liverpool University, has lately published its third quarterly journal. It contains the following articles:—"Agricultural Products of the Ivory Coast," by E. Castaing; "Gold Coast Department of Agriculture," by Viscount Mountmorres; "Botanic Gardens at Konakry, French Guinea," by Viscount Mountmorres and Leo Farmar; "Notes on the Gold Coast," by Francis Crowther; "Analysis of Mollendo Biscuit Rubber," by D. Spence; "Absorbent Value of Ramie Fibre," by Dr. Eric Drabble and F. A. Upsher-Smith; and "Possibilities of Ramie," by D. Edwards-Radclyffe. The Institute is doing good work collecting and publishing information concerning the industries of the tropics and in original research and investigations connected with them.

Influence of the Scion upon the Stock.—M. Van Heede reports, in a recent number of *Le Jardin*, that he has received from M. Lindemuth, Berlin, through Messrs. Haage & Schmidt, an exceedingly interesting novelty showing the influence of the graft of Abutilon Thompsoni on the stock of Kitaibelia vitifolia. By grafting the Abutilon on the Kitaibelia the shoots produced below the graft became prettily variegated. The large leaves of the Kitaibelia are freely marked with touches of bright red, which are very conspicuous even from a distance. Kitaibelia vitifolia is a native of the South of Europe, and is a hardy shrub, especially in Central and Southern France. The new production bears the inappropriate name of Kitaibelia Lindemuthii ×.

Parks and Squares of the United States.—The first Bulletin of the American Association of Park Superintendents is before us, and is of interest in helping us to compare the public spaces in U.S.A. with those of Great Britain. In our country, outside the cities, almost every private house has its own garden, large or small, our public parks being intended chiefly for the enjoyment of those who, in crowded districts, have no other outlet. The American open spaces, on the other hand, are for the benefit of all classes, since small, separate gardens are the exception rather than the rule. Hence there is the more need for skilful gardening that shall appeal to cultivated tastes and maybe prove instructive as well as merely ornamental, while in our country the aim is generally to secure a pleasant playground for town children and some bright floral effects and shady nooks for their elders.

Publications Received. *The School Garden*, by J. J. Hemsley. Published by Blackie & Son, Ltd. Price 1s.—*The Estate Magazine*, October. The contents include an article upon the estates of the Earl of Selkirk, notes upon Hops and Hop picking, upon fruit and railway rates, the storage of Apples, &c.—*The Book Lover*, October.—*The Garden City*, October. This includes a portrait of Mr. George Cadbury, whose name is familiar in connection with Bournville. The following leaflets have reached us from the Board of Agriculture and Fisheries. No. 108, *Hints on the Formation of Permanent Pastures*; No. 175, *The Use of Inorganic Substances as Manures*; No. 174, *Tree Roots* (Armillaria mellea).—From the Transvaal Department of Agriculture. Division of Publications, Bulletin No. 1, *Burr weed or Boete Bosch* (Xanthium spinosum), by William Macdonald; Bulletin No. 3, *The Food of Plants*, by Herbert Ingle. Also from the Division of Botany, leaflet No. 4, *The Cocklebur* (Xanthium strumarium).—From the Ontario Department of Agriculture, *The Common Fungus and Insect Pests of Growing Vegetable Crops*, by Wm. Lochhead and J. D. Jarvis.—From the United States Department of Agriculture, Farmers' Bulletin No. 254, *Cucumbers*, by L. C. Corbett. A useful pamphlet dealing with growing Cucumbers for early market in the open and in cold frames, Cucumbers for pickling, and Cucumbers forced under glass.—From the Bureau of Entomology, *Requirements to be complied with by nurserymen and others who make interstate shipments of nursery stock* by A. F. Burgess.

LAW NOTE.

PREVENTION OF CORRUPTION ACT, 1906.

The following is the full text of the Act for the better Prevention of Corruption passed on August 4, 1906, and which will come into operation on January 1, 1907.—

"Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. (1) If any agent corruptly accepts or obtains, or agrees to accept or attempts to obtain, from any person, for himself or for any other person, any gift or consideration as an inducement or reward for doing or forbearing to do, or for having after the passing of this Act done or forborne to do, any act in relation to his principal's affairs or business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's affairs or business; or

If any person corruptly gives or agrees to give or offers any gift or consideration to

to any agent as an inducement or reward for doing or forbearing to do, or for having after the passing of this Act done or forborne to do, any act in relation to his principal's affairs or business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's affairs or business; or

If any person knowingly gives to any agent, or if any agent knowingly uses with intent to deceive his principal, any receipt, account, or other document in respect of which the principal is interested, and which contains any statement which is false or erroneous or defective in any material particular, and which to his knowledge is intended to mislead the principal, he shall be guilty of a misdemeanour, and shall be liable on conviction or indictment to imprisonment, with or without hard labour, for a term not exceeding two years, or to a fine not exceeding five hundred pounds, or to both such imprisonment and such fine, or on summary conviction to imprisonment, with or without hard labour, for a term not exceeding four months, or to a fine not exceeding fifty pounds, or to both such imprisonment and such fine.

(2) For the purposes of this Act the expression "consideration" includes valuable consideration of any kind; the expression "agent" includes any person employed by or acting for another; and the expression "principal" includes an employer.

(3) A person serving under the Crown or under any corporation or any municipal, borough, county, or district council, or any board of guardians, is an agent within the meaning of this Act.

2.—(1) A prosecution for an offence under this Act shall not be instituted without the consent, in England of the Attorney-General or Solicitor-General, and in Ireland of the Attorney-General or Solicitor-General for Ireland.

(2) The Vexatious Indictments Act, 1859, as amended by any subsequent enactment, shall apply to offences under this Act as if they were included among the offences mentioned in section one of that Act.

(3) Every information for any offence under this Act shall be upon oath.

(4) The expenses of any prosecution on indictment under this Act shall be defrayed as in cases of indictment for felony.

(5) A court of quarter sessions shall not have jurisdiction to inquire of, hear, and determine prosecutions on indictments for offences under this Act.

(6) Any person aggrieved by a summary conviction under this Act may appeal to a court of quarter sessions.

3. This Act shall extend to Scotland, subject to the following modifications:—

(1) Section two shall not extend to Scotland.

(2) In Scotland all offences which are punishable under this Act on summary conviction shall be prosecuted before the sheriff in manner provided by the Summary Jurisdiction (Scotland) Acts.

4. (1) This Act may be cited as the Prevention of Corruption Act, 1906.

(2) This Act shall come into operation on the first day of January nineteen hundred and seven."

A STRIPED GOOSEBERRY.

SOME years ago I found a single striped berry on a bush of Warrington's Red Gooseberry, all the others were pure Warrington red although I annually have about six or seven hundred of Gooseberries annually, I never saw another striped berry amongst them. I had the seed of the above mentioned berry sown. Several of the seedling bushes have produced striped fruit. I enclose some of the berries (see fig. 112), which of these are the most novel and pretty, the flavour is also good.—*W. G. Holmes.*

[We have also an illustration of a striped currant (red), striped red and white (fig. 113).]

NURSERY NOTES.

MESSRS. G. & A. CLARK, LTD.

ON the slope of the hill dominated by the imposing Castle of Dover is situated the nursery, or one of the nurseries, of Messrs. G. & A. Clark. Before seeking an entrance, it is as well to look westward over the narrow valley in which, as contradistinguished from the seafront, the town of Dover threads its way for some few miles. Hills upon hills, with bold outlines and noble sweeps, attract the attention of the visitor, and bring to remembrance the lower Welsh hills. On his way up from

FIG. 112.—"HELEN HOLMES," STRIPED GOOSEBERRIES.

the main street through an apparently endless maze of mean streets, not to say slums, the curious visitor may possibly pass the disused burial ground, where Churchill, a now-forgotten poet, lies. With this inscription:—

1764
Here lie the remains of the celebrated
C. CHURCHILL.
Life to the last enjoyed,
Here Churchill lies
Candidate.

For strictly personal reasons this tomb has a particular interest for the writer, as, many years ago, two of his forbears visited the spot the one, a nurseryman, planted a Bay tree, which died within the last few years; whilst

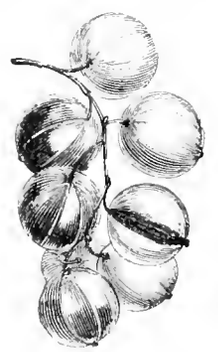


FIG. 113.—STRIPED CURRANT.

the other, a well-known poet in his days, composed and published a sonnet in honour of Churchill.

Churchill is forgotten, those who honoured his memory are in their graves, the Bay tree is dead, and nothing remains but the headstone. It is right, however, to add that the stone is in good condition; indeed, it looks as if the original memorial had, within recent years, been replaced by a newer one.

Close by is a public-house, which has a curious sign, "The Cause is Altered," which suggests the enquiries what cause? why altered? But no response was forthcoming from the natives to whom the question was put.

These details have, however, nothing to do with Messrs. Clark's nursery. We must put an instant check on our discursiveness.

Speaking generally, a seaside town is not addicted to horticulture. The ever-changeful sea, the lovely atmospheric effects, the *va et vient* of a frequented harbour, divert the attention from gardens and flower-beds.

And yet something might be accomplished on the sea-front of Dover were the attempt made, as some seaside resorts that we know of have their shrubberies and plantations, which add to the attractiveness of the promenades, and by no means detract from the beauty and variety of the seascape. The subject of seaside planting has often been discussed in these columns, but those who are not disposed to rout out back volumes of the *Chronicle* may form an excellent idea of what is likely to succeed by the seaside by paying a visit to the nursery above mentioned. The great demand, however, here, as elsewhere nowadays, is for "cut flowers" and plants for the decoration of apartments, and so we find house after house filled with the commoner Ferns and Palms, Lorraine Begonias, Carnations, Tuberoses, Chrysanthemums in promising condition, Pelargoniums, Asparagus, Primula obconica, and a host of similar plants, not forgetting Aristolochia elegans, introduced by the late Mr. W. Bull, which has a special interest as having been first described and figured in these columns. We did not expect to see it grown for "cut flowers," but, nevertheless, it is, we are told, appreciated for that purpose, and a vaseful in the shop window in the town afforded corroboration of the statement.

Between one range and another was a border of Belladonna Lilies, dazzlingly beautiful and striking in appearance. The plants were sheltered on both sides, and doubtless the border derived some additional heat from the pipes in the houses.

The outdoor department is very extensive, occupying several acres on the slope of the hill from the bottom nearly to the top, broken up by shelter hedges of Beech and Hornbeam. The soil is mostly pure chalk, and the effect of a dry summer on such a slope and such a soil might have been expected to be visible. At the end of September, in glowing weather, when our visit was made, no such ill effects were perceptible. It was too late in the year to see the place in perfection, but the Dahlias were noteworthy, and untouched as yet by frost. The Twentieth Century, though nearly over (the flowers so-called, not the century!), was still noteworthy for delicacy of tint and elegance of form. Anemone japonica in many varieties still lent colour to the garden, but pre-eminent in this respect were the perennial Asters, of which Riverslea and Bessarabicus may specially be mentioned, Sedum spectabile Sunflowers, Rudbeckias, the scarlet-flowered Gilia coronopifolia, and other perennials were here in profusion, and showing a depth and intensity of colour rarely seen away from the sea. In addition to a good stock of rock-plants, climbers, and shrubs suitable for seaside planting, we were surprised to see a fine bush of Abutilon vitifolium, which, we were told, proves quite hardy here, and flowers profusely. We get specimens of this each year from Ireland and the south-western counties, but we have not previously seen it in Kent. Noteworthy also are edgings of the dwarf Veronica buxifolia, excellently suited for the purpose. The little shrubs are lifted and replanted about once in three years.

We have no intention of writing a catalogue, but, having seen the exhibits made this summer at the R.H.S. by this firm, a visit to their nursery furnished an easy explanation of their success.

TRADE NOTICE.

MESSRS. W. BAYLOR, HARTLAND & SONS.—We are informed that this firm has determined to dispose of their city establishment in Cork, and to carry on business exclusively at Ard-Carra, Ballintemple, in order to be able to give undivided attention to the nursery business, particularly the culture of bulbs.

HOME CORRESPONDENCE.

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

Tomato Carter's "Sunrise" (see fig. 114). —This Tomato is said to have proved the finest ever tested under the Royal Horticultural Society's trials. When exhibited in full bearing on July 4 of last year it gained the high honour of a First Class Certificate. Its healthy and robust constitution, evenness of size, and its suitability as a dessert fruit render it a desirable variety; in fact Carter's Sunrise is one of the best Tomatos ever brought out for both in-door or out-door culture. The house in which the plants shown in fig. 114 are growing is a light, well ventilated, span-roofed structure, and forms one of a range of three set apart for Tomato culture in the gardens at King's Walden Bury, Hitchin, the residence of Mr. S. Fenwick Harrison. The plants were set out in a bed 6 inches deep and 15 inches wide, resting on a layer of ashes, a plan I find to produce a marked improvement in the culture of Tomatos. The compost used consisted of 20 parts of loam, 3 of old Mushroom bed manure, 1 of burnt earth, and 1 of lime rubble. The house has been planted again since the photograph was taken, and the first fruits of the new crop are now setting. *A. J. Hartless, King's Walden Bury Gardens.*

——— I am interested in the correspondence in the *Gardeners' Chronicle* on Peach culture out-of-doors. A few remarks from Cheshire may, perhaps, be of interest, as most of the other correspondents appear to live much south of here. In these gardens a wall 56 yards long and about 10 feet high is furnished with Peach trees from which, as a rule, we obtain fairly good crops of fruit. The border in which the trees are planted is raised 2 feet above the level of the surrounding garden, and is 12 feet in width. The soil possesses a natural drainage. I have not seen any appearance of blister on the trees, but on another wall, which is 34 yards long, we have a little of the disease more or less every year, but not sufficient to cripple the trees. These are planted on the same level as the garden, on a 4 feet border, and are therefore in much colder and damper soil than those on the longer wall, and to this cold and damp I attribute the spread of the blister. Both walls face due south, the only protection the trees receive is a double net over them when the flowers are about half open, but this is taken off if the weather permits when the Peaches are about the size of Peas. As we have the same varieties on both walls it is a proof that raised borders are an advantage. Nectarines do not succeed with us, and the culture here out of doors has been discontinued. A great secret, in my opinion, in the successful cultivation of Peaches is to train the young shoots well apart, say from 6 inches to 8 inches, and to afford plenty of water at the roots at all seasons of the year when the trees are active. The syringe should also be liberally applied. With regard to the question of flavour, out-of-door Peaches are preferred here to those cultivated inside. *Jas. Thompson, Delamere House Gardens, Cheshire.*

Polygonum Baldschuanicum as a Wall Climber. From what I saw of this Polygonum growing at the foot of the south side of Mr. Frank Barclay's house in Cromer, I consider this to be quite a desirable wall-climber, especially where quick growth is desirable. The naturally drooping habit of its long shoots, clothed with its pinky-white blossoms in the autumn, is very effective. *E. M.*

Strawberry Prospects for 1907. —It is rather doubtful if good crops of this fruit will be seen next year in many parts. Our plants, on account of the long drought, have made scarcely any new growth, and no doubt there are many other growers who can tell the same tale. However, the rain on the 2nd inst. did much good, and if we get mild weather for a month it will give the plants a chance of making the necessary growth. *H. J. Long.*

Rough Plate as Glazing for Garden Frames. As a means of avoiding the labour of affording shade to plants in frames and pits during hot weather and the loss from breakage, rough plate glass is too rarely put to its obvious uses in gardens in this country, excepting in Ferneries and Orchid Houses. It may be said that it is not free from breakages during hard frost, when iron sash-bars instead of wooden ones are employed. In lean-to and span-roofed houses, in some Continental nurseries and private gardens, the roof is glazed with rough plate in sheets reaching from the wall plate to the apex, in place of the 12 to 15 panes of the ordinary, weak polished glass; and frame and pit lights are filled with one sheet only. It is a pity that we possess but little accurate knowledge of the advantages and the reverse of the use of rough plate glass in this country. *F. M.*

Fig. 114. TOMATO "SUNRISE."

Outdoor Peaches. —I am sending a photograph of a Peach tree in the open, planted against a wall 14 feet in height, with a south aspect. It has been in its present position nine years, and has a spread of branches measuring 38 feet. The variety is Violette Hative, and it has regularly produced heavy crops of fruit. The tree is simply protected in springtime with a double layer of fish netting. It has this season carried eighteen dozen handsome fruits, some of which were successfully exhibited. Several other trees of different varieties are growing on the same wall, but all these suffer more or less from leaf blister and mildew, and I am of opinion that if hardy, vigorous varieties were selected for outdoor culture the trees would be much less troubled with blister, &c. *J. Lockie, senr., Piddington Hall Gardens, Huntingdon.* [The photograph, which we do not reproduce, showed a well-trained, heavily fruited tree.—Ed.]

Horse Chestnut in Flower. —In this village is now to be seen a Horse Chestnut tree (Æsculus Hippocastanum) in full flower, precisely as it should be in the spring. Owing to the great heat and drought, the old foliage has fallen, and the new buds have burst, covering the tree with foliage of a light green colour, and flowers, which are as though the tree had been subjected to hard forcing. The tree is always a centre of attraction owing to the fact that the village smithy is beneath its shade. The recent heavy rains and mild autumn weather are doubtless the direct cause, following the drought and heat of summer. *H. Ralph..., Buring, Kent.*

The Proposed Champion Vegetable Class. In fairness to myself and other exhibitors I should like to reply to the remarks of ... in the issue for October 6, and will do so as briefly as possible. In the first place, he refers to my bewailing the fact that the Shrewsbury Society does not provide more liberally for us poor vegetable exhibitors. If ... will carefully study the Shrewsbury schedule, he will notice that very much better prizes are offered by the seedsmen for "...

than the society offers in their open and principal class for "no fewer than twelve kinds." In my opinion, this latter class should be the principal vegetable class in the show, and I have no doubt this is also the view of other exhibitors. Anyhow, that is the only important alteration I would wish made. At the same time, I cannot see why the successful competitor in this one class should be termed champion. In reference to Chiswick and Edinburgh, *Nous verrons* apparently runs away from the argument, and asks: "What chance had the small grower at either?" Though my sympathies are, and always have been, with the small growers, the larger exhibitors are not to blame, but rather the societies who frame the schedules. In the case of a society of such importance as Shrewsbury, it is highly desirable that the best produce in the country should be brought into competition, and this can only be assured by offering substantial prizes of sufficient value to meet the large expenses incurred by those living at a considerable distance. I have not the slightest doubt but that the public would be equally interested in a smaller class for a collection from growers with a limited area, but let me remind *Nous verrons* that it is not always the man who has every facility and ten or more acres of kitchen garden who succeeds; neither is it, as he infers, always a question of money. As far back as June, 1883, substantial prizes were offered at South Kensington for a collection of vegetables, and most of the best-known exhibitors of that day competed. In a very keen competition I was awarded the first prize, and also the first prize for a collection of six varieties of Lettuce (see *Gardeners' Chronicle*, June 30 of that year). Again, in the autumn of the same year, I was awarded the first prize for a collection of twelve varieties at the same place. I mention these facts simply in support of my case, and not with any desire of self-aggrandisement. I was then in a small place in Surrey, and one in which very little money was spent on the gardens. The kitchen garden was small, and I had to supply a very large household with vegetables. I am questioned by *Nous verrons* as to my decision in which two classes I intended to compete. I most certainly never kept it a secret, neither did I go the round of exhibitors and advertise it. But, even supposing I had done so, it would be no concern of *Nous verrons*. As to the question of wrong naming, it is surely not fair to ask me to answer for other exhibitors, but, because I do not, this does not prove that I admit it. No doubt *Nous verrons* has some proof of this, he may have been an exhibitor himself. I know there is a great similarity in many varieties, but I also know at the same time that these kinds are really distinct. Take the case of the four varieties of Cauliflowers and Broccoli. Veitch's Autumn Giant Cauliflower, Sutton's Early Giant Cauliflower, Sutton's Mammoth Cauliflower, and Sutton's Michaelmas White Broccoli. These when staged at their best are very much alike, nevertheless each one is thoroughly distinct and has its own distinct value to all cultivators of vegetables. I have seen cases, even in Chrysanthemums, especially among the Incurved flowers, where Tweedledum and Tweedledee are very closely related, and others have thought so, too.—*Edgar Burt.*

—In your issue of October 6, *Nous verrons* states "no one will deny that it is all a question of money and space in the production of choice vegetables." This certainty has nothing to do with the issue at stake. I venture to state that if *Nous verrons* were a thoroughly practical gardener, such a statement could not possibly emanate from him, for he must know that there are also many large gardens, the vegetables from which would not compare with those of smaller growers. It is certain that if *Nous verrons* had a large garden to deal with he would soon find that something other than money and space were required to produce vegetables of the highest quality. I may say that, in respect to another question that has been raised, as I have for some time past obtained all my vegetable seeds from one firm I could not enter in the class belonging to another firm.—*James C. S. R.*

We have already stated that "*Nous verrons*" is a thoroughly practical gardener, whose opinion is worthy of attention, even from those who [illegible] in his conclusions.—[Ed.]

A POTATO TRIAL. A trial of six well-known varieties of Potatos, Up-to-Date, Duchess of Cornwall, The Factor, Dalmeny Beauty, British Queen, and Northern Star, conducted under the Surrey County Education Committee, expressly to show the results of climate or other conditions in producing seed-tubers best fitted for reproductive purposes, was planted at Farnham under exceedingly dry conditions on a small area of land in April last. The crop was lifted on the 12th inst. In this instance, tubers specially selected and of every size and carefully sprouted and planted alike in rows 2½ feet apart gave in bulk the following weights:—Irish sets 237lb., Scotch 225lb., Midland 150lb., and from Surrey seed 65lb. It is thus seen that the produce of the Irish or Scotch seed tubers was nearly four times greater than was that of Surrey seed, and fully 50 per cent better than Midland seed. In four cases the Irish seed gave the best results, and in two cases the Scotch seed. Thus are the results of Messrs. Sutton's trials (see page 260 of last issue) well sustained. *A. D.*

A TORQUAY GARDEN.—Since the publication in the *Chronicle* in 1903 of some notes on my garden many additions of great interest have been made to it. We have a fine collection of Trachycarpus, one raised from seed grown here. A lovely Phoenix canariensis has now been growing out of doors for the last 16 years. It was given to me as a pot plant when about two years old by Mr. Veitch, of Exeter. There is also a grand Latania borbonica which, when given me, was nearly dead. It had been grown in a greenhouse but was transferred to the open air and, thanks to the care of my gardener, is now thriving. Among other plants doing well are Corypha australis, Cocos australis, Chamærops humilis, and a lovely Tree-Fern (Dicksonia?) planted out four years ago. This has thrown out full-sized fronds and is now an object of much beauty, with a full complement of fronds of a lovely green colour. It stands gracefully between two noble Palms, and is sheltered from almost every wind that blows.—*R. Hamilton Ramsay, Torquay.*

CALCEOLARIA AMPLEXICAULIS. At the present time (October 5) this plant is one of the showiest subjects in a ribbon border in these gardens. Owing to special treatment they have succeeded better than usual this season, and the delicate pale yellow flowers, in heads attaining a height of 2 to 3 feet, have a pleasing, as well as a very natural effect. The plants are placed some 20 inches apart in the row, and each, just now, is carrying a dozen or more inflorescences which require careful staking to show them to the best advantage. Cuttings for next season's plants should be inserted in September in a sandy compost, and placed in a little heat. They have usually been potted in early spring, in 2½-inch pots, but last season, instead of using this size pots, they were grown in 6-inch pots with most satisfactory results.—*M. McN.*

SOCIETIES.

ROYAL BOTANIC.

OCTOBER 17. The autumn show of this Society opened in wet weather, and the attendance was poor. The exhibits were not numerous.

The Society staged an interesting collection of economic plants, Monstera deliciosa, in fruit, Sansevieria grandis, also in fruit, many spice plants, &c. The conservatory was gay with Aster Amellus, arranged with Yellow Pompon Chrysanthemums, while the corridor was decorated with Chrysanthemums and Celosias, which made a bright display.

Miss ADAMSON (gr. Mr. G. Kelf), Regent's Park, put up a fine group of Codiæums (Crotons), the plants being remarkably well coloured; the varieties were Flamingo, Williamsi, rubrimunum, Youngi, Mortfontainense, and other useful sorts. A display of fruits from the same exhibitor included well-finished Alicante Grapes; Melons, Regent's Park, Best of All, and Earl's Favourite; Apples, King of the Pippins (beautifully coloured), Charles Ross, Peasgood's Nonsuch, and others; Pears, Conference, Beurré Diel, &c. (Large Gold Medal.)

Messrs. J. S. WARE, LTD., Feltham, staged a fine exhibit of Dahlias, perennial Asters, &c. Among the Dahlias, Mrs. W. Marshall, H. Shoesmith, Amos Perry, Harbour Light, and Daisy Easton were all good. Pæony-flowered Dahlias were also shown. Among the Asters, the varieties cassubicus, Mrs. F. W. Raynor, lævis, Melpomene, and Framfieldi were conspicuous. (Large Gold Medal.)

Mr. ERIC F. SUCH, Maidenhead, filled a table nearly 100 feet in length with Chrysanthemums cut from the open ground, Michaelmas Daisies, and coloured foliage. Notable varieties of Chrysanthemums were Miss B. Miller, Nellie Blake, Horace Martin, Murillo, and Cranford White. Asters were shown in the best market varieties. Foliage of Quercus coccinea was very bright. (Gold Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, W.C., put up an extensive exhibit of flowers. Asters were a great feature, and of these we may mention Ryecroft Pink, cordifolius, Ideal, turbinellus alba, and Amellus Framfieldi. Kniphofias were shown well. Cimicifuga simplex is a beautiful autumn flower with slender spikes of feathery white flowers. Nerine flexuosa alba is a pure white variety, with flowers on rather long stems. (Gold Medal.)

PROPOSED FEDERATION OF HORTICULTURAL MUTUAL IMPROVEMENT SOCIETIES.

OCTOBER 16.—In accordance with announcements made in these pages, a meeting was held on Tuesday last in the Royal Horticultural Hall, Westminster, for the purpose of bringing about a federation of the Mutual Improvement Associations.

The meeting was called at the instance of the Croydon Society—one of the youngest and most flourishing of these bodies, and Mr. Reid, its President, occupied the chair, Mr. H. Boshier, the Croydon secretary, acting as secretary pro tem. There were upwards of fifty gentlemen present, but it became apparent that many of these were not members of any society that it is proposed to federate. Mr. H. Boshier read a short statement, setting forth some of the advantages it was thought might be obtained by federation, such as the aid that might be afforded by richer societies to poorer ones, the helping through the London Executive Committee to establish debating societies in new districts, making arrangements for cheap analysis of soils (already done by the Royal Horticultural Society for the benefit of its members), the obtaining of railway facilities for societies visiting distant localities, the arranging for paid lecturers on terms to be decided by the Executive Council, and the holding of an annual conference of members, and monthly meetings of the Executive.

Mr. Alex. Dean expressed sympathy with the movement, stating that it was extremely difficult for many of the smaller societies to get suitable lecturers. He moved the following resolution: "That this meeting of delegates of Gardeners' Mutual Improvement Societies considers the time has arrived to form a federation of these societies throughout the British Isles, and appoints a provisional committee to draw up a scheme of federation, which scheme shall be submitted to a general meeting of Gardeners' Mutual Improvement Societies at a later date for approval."

The motion having been seconded by a member of the Salisbury Association, a member of the East Anglian Horticultural Club said he thought the adoption of the resolution would have the effect of giving help to the weaker societies. For themselves, the East Anglian Club, with its 600 members, was strong enough to be able to pay the travelling expenses of lecturers from a distance, and consequently was not in need of help. He thought that it would be impossible for delegates from Norwich to attend meetings in London.

Mr. John Weathers, secretary of the British Gardeners' Association, protested against the use of the word "Gardeners" in the resolution. It was unfair to professional gardeners, and very misleading to the general public to describe as gardeners' associations, societies that included mechanics, schoolmasters, professional men of various kinds, and labourers. If the membership was largely made up of amateurs, how could they be properly described as gardeners' associations?

A delegate explained that his particular association was known as a "horticultural" society for that very reason, and others appeared to think this would be the more correct term to apply to the federation. In this connection, it may be pointed out that one of the members subsequently elected to the provisional committee was a delegate from the Battersea and Wandsworth Amateur Chrysanthemum Society, which is almost or entirely composed of members who are not professional gardeners. The Chairman explained that if the provisional committee were appointed the question of title would be among the first subjects for consideration.

Mr. Lyne (Chislehurst) strongly supported the resolution, and said that his society was composed of all in the district who had a love for gardening, and who desired to be members.

Another delegate asked what would be the affiliation fee. It would have to be made as low as possible, or the federation could not succeed. Mr. E. Beckett and Mr. J. Gregory also supported the resolution, the former gentleman explaining that he is not a member of any association interested in the federation.

Mr. W. P. Bound (Reigate Society) declared that the holding of an annual conference would be better than the establishing of a central organisation, and the holding of meetings in London once a month. His society was largely supported by the gentlemen in the Reigate district who would not continue to do this if they knew that part of the money they subscribed would pass out of the district. The Reigate Society had been made a flourishing society by hard work, and he did not think it would be disposed to send funds to localities where less effort had been made, and, therefore, less success achieved.

Mr. Lyne said he did not favour the practice of seeking funds from employers. The societies should be self-maintaining.

Mr. George Gordon supported the resolution, specially referring to the matters of lectures and lantern slides as subjects in which the proposed federation could help individual societies in out-of-the-way districts.

Mr. Mills (Croydon Society) and a delegate from Newport (Monmouthshire) supported the resolution.

The Chairman then put the question, when 24 hands were held up in its favour, and none voted to the contrary. The Chairman therefore, putting the question as a substantive motion, pleaded for a vote that would be more representative, as it scarcely included half of the number present, but on the second count there were only 23 hands uplifted.

A delegate from Tunbridge Wells then said that his society was already affiliated with the Royal Horticultural Society, and the British Gardeners' Association, and was therefore anxious to know what further advantages could be gained from federation. Another delegate asked who would pay the expenses of delegates who attended the meetings of the executive. The Chairman explained that these were matters that could only be settled after a provisional committee had been formed, and proceeded to accept nominations for a committee to consist of fifteen members. This matter proved to be one of some difficulty, the Bath Society and several others at a long distance from London refusing to entertain the idea of election on account of the expense it would entail. Eventually the following gentlemen accepted election:—Messrs. J. Lyne, Chislehurst; J. Gregory, Croydon; M. E. Mills, Croydon; H. Boshier, Croydon; Price, Beckenham; Alderman, Wimbledon; Blencowe, Kingston; Leach, Dulwich; May, Kenley; Field, East Anglian Horticultural Club; Patterson, Bickley; Jay, St. Barnabas, Sutton; Forth, Battersea and Clapham; and Pearman, Caterham; the Sevenoaks Society were to be asked to depute a member.

Votes of thanks concluded the meeting.

SCHEDULES RECEIVED.

West of England Chrysanthemum Society's exhibition, to be held in the Plymouth Guildhall and Square on Tuesday and Wednesday, November 6, 7, 1906. Hon. Sec., Mr. Charles Wilson, 4, North Hill, Plymouth.

Devizes Chrysanthemum Society's show, to be held in the Corn Exchange, Devizes, on Tuesday, November 13. Hon. Sec., Mr. A. J. Randell, Exchange Place, Devizes.

MARKETS.

COVENT GARDEN, October 17.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asters, per dozen bunches	1 6– 2 6	Lily of the Valley, p. dz. bunches	5 0– 8 0
Bouvardia, per dz. bunches	4 0– 6 0	— extra quality	9 0–12 0
Calla aethiopica, per dozen ...	2 6– 4 0	Marguerites, white, p. dz. bunches	2 0– 3 0
Centaurea cyanus, doz. bunches	1 0– 2 0	— yellow, per dz. bunches	2 0– 3 0
— suaveolens	3 0– 4 0	Mignonette, per dz. bunches	2 0– 3 0
Coreopsis grandiflora, per doz. bunches	1 6– 2 0	Odontoglossum crispum, per dozen blooms	2 6– 3 0
Carnations, per dozen blooms, best American various	2 0– 4 0	Pancratiums, doz. fls. ...	2 0– 3 0
— smaller, per doz. bunches	1 0– 2 6	Pelargoniums, show, per doz bunches	3 0– 5 0
— Malmaisons	3 0– 8 0	— Zonal, double scarlet	3 0– 4 0
Cattleyas, per doz blooms	9 0–12 0	Pyrethrums, dozen bunches	1 6– 2 6
Chrysanthemums, per dz blooms	1 0– 2 6	Roses, 12 blooms, Niphetos	1 0– 2 0
— small blooms, per doz. bnchs.	2 0– 6 0	— Bridesmaid	1 0– 1 6
Dahlias, per dozen bunches	2 0– 3 0	— Kaiserin A. Victoria	1 0– 2 0
Eucharis grandiflora, per doz. blooms..	3 0– 4 0	— Caroline Testout ...	1 6– 3 0
Gardenias, per doz. blooms ...	1 6– 2 6	— C. Mermet	1 6– 2 6
Gladiolus, various, per dz. bnchs.	9 0–12 0	— General Jacqueminot ...	1 0– 1 6
— brenchleyensis, per doz. spikes	1 0– 2 0	— in bunches, per dozen ..	3 0– 5 0
Gypsophila elegans, per doz bunches	2 0– 3 0	— Liberty	1 0– 2 0
Gaillardias	2 0– 3 0	— Mad. Chatenay	1 6– 3 0
Heather, white, per doz. bunches	3 0– 6 0	— Mrs. J. Laing	1 0– 2 6
— purple	2 0– 3 0	— from the open various kinds, per dz. bnchs.	3 0– 5 0
Lilac, white, per bunch ..	2 0– 3 0	Statice, per dozen bunches	4 0– 6 0
Lilium auratum ..	2 0– 3 0	Stephanotis, per dozen trusses	4 0– 6 0
— lancifolium, rubrum and album ..	1 6– 2 0	Stocks (double) white per doz. bunches	2 0– 4 0
— tigrinum, per bunch ..	2 0– 3 0	Tuberoses, per dz blooms	0 4– 0 6
— longiflorum	2 0– 4 0	Violets, per dozen bunches	1 6– 3 0
		— Parma, p bch.	2 0– 3 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Ampelopsis leaves p. dz. bunches	1 6– 2 0	Ferns (French), dz. bunches	2 0– 5 0
Asparagus plumosus, long trails, per doz.	4 0– 8 0	Hardy foliage (various), per dozen bunches	2 0– 3 0
— — medium, bunch ..	1 6– 2 0	Hardy Grasses, per doz. bunches	2 0– 3 0
— — short sprays per bunch	0 6– 0 9	Ivy-leaves, bronze	1 6– 2 0
— Sprengeri	0 6– 1 0	— long trails per bundle ..	1 0– 2 0
Adiantum cuneatum, doz. bun.	4 0– 6 0	— short green, doz. bunches	2 0– 3 0
Berberis, p. bunch	2 6– 3 0	Moss, per gross ..	5 0– 6 0
Croton leaves, per bunch	1 0– 1 6	Myrtle, per dozen bunches ...	2 0– 5 0
Cycas leaves, each	1 6– 2 0	Pernettya, with berries, per bunch	0 3– 1 0
Fern, English, p. dozen bunches	1 0– 2 0	Smilax, p. dz. trails	2 0– 5 0

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

	s.d. s.d.		s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0– 8 0	Dracaenas, per doz.	9 0–24 0
Aralia Sieboldi, per dozen	4 0– 6 0	Erica caffra ...	9 0–12 0
— larger	9 0–12 0	— hyemalis, per dozen	12 0–15 0
Araucaria excelsa, per dozen	12 0–30 0	— gracilis, p. dz.	12 0–18 0
Aspidistras, green, per dozen	18 0–30 0	— nivalis	18 0–24 0
— variegated, per dozen	30 0–42 0	Eulalia japonica ..	12 0–15 0
Asparagus plumosus nanus, doz.	6 0– 9 0	Euonymus, per dz.	4 0– 9 0
— Sprengeri, doz.	6 0– 8 0	Ferns, in thumbs, per 100 ...	7 0–10 0
— tenuissimus per dozen ..	8 0–10 0	— in small and large 60's ...	16 0–25 0
Asters, per dozen	3 0– 6 0	— in 48's, per dozen	4 0–10 0
Bouvardias, per dz.	4 0– 6 0	— in 32's, per dozen ..	10 0–18 0
Chrysanthemums, best, per doz.	12 0–24 0	Ficus elastica, per dozen ...	9 0–18 0
— smaller, per doz.	5 0– 8 0	— repens, per doz	4 0– 6 0
Clematis, per doz.	8 0– 9 0	Fuchsias, per doz.	4 0– 6 0
— in flower ...	9 0–12 0	Kentia Belmoreana, per dozen	12 0–18 0
Cocos Weddelliana, per dozen	9 0–18 0	— Forsteriana, per dozen ...	12 0–21 0
Coleus	3 0– 5 0	Latania borbonica, per dozen	12 0–18 0
Crotons, per dozen	12 0–30 0	Lilium longiflorum, per dz.	12 0–18 0
Cyperus alternifolius, dozen ...	4 0– 5 0	— lancifolium, per dozen ...	18 0–24 0
— laxus, per doz	4 0– 5 0		

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

	s.d. s.d.		s.d. s.d.
Lily of the Valley, per dozen ...	18 0–30 0	Roses, per dozen ..	12 0–18 0
Marguerites, white, per dozen ...	4 0– 8 0	Selaginella, dozen	4 0– 6 0
Pelargoniums, Zonal, pr. dz.	3 0– 5 0	Solanum capsicastrum, per doz.	6 0– 9 0
Physalis Franchetti, each ...	1 6– 3 6	Spiraea japonica, per dozen ..	6 0–10 0
		Veronicas, per doz.	3 0– 6 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, Nova Scotian.		Lemons	
— Gravensteins, per barrel ...	14 0–17 6	— Messina, case	10 0–17 0
— Blenheims, per barrel	16 0–17 6	— Naples, p. case	20 0–35 0
— Emperors, per barrel ..	16 0 —	Lychees, per box ..	1 0– 1 2
— Ribstons, per barrel ..	16 6 —	Melons, each ..	1 0– 2 6
— English, ½ bus.	2 0– 6 6	— Valencia, case	9 6–12 0
— English, per bushel (46 lbs. to 50 lbs.) ...	3 6–12 0	— Rock	1 6– 2 6
— Newtown Pippins, per case	8 6–11 6	Mangos	4 0– 8 0
Bananas, bunch. West Indian, red ...	7 0 —	Nuts, Cobnuts, per doz. lb. ..	4 6– 5 0
— No. 1 ...	6 6– 7 6	Brazils, new, per cwt. ...	47 0 —
— No. 2 ...	6 0– 6 6	— Barcelona, per bag	24 6 —
— Extra ..	10 0–12 0	— Walnuts, per bag	20 0 —
— Giant	12 0–14 0	— per Grenoble bags ...	5 6– 6 0
— Jamaica	4 6– 6 0	— Cocoa nuts, 100	10 6–13 6
— Loose, per dz.	0 8– 1 0	Oranges, per case:	
Blackberries, peck	2 0– 2 6	— Jamaica	8 6–12 0
Cranberries p. case	11 0–11 6	Peaches (English), per dozen	6 0–15 0
Figs, per dozen ..	1 0– 1 3	— French, box ..	1 0– 2 0
— Italian, box ...	0 6– 1 0	— Persimmons p. box ..	1 0– 2 0
— French, p. box	0 9– 1 2	Pears (English), ½ sieve ...	2 0– 4 6
Granadillas, dozen	2 0– 2 6	— English, per bushel (56 lbs.)	4 0– 9 0
Grape Fruit, case	9 0–12 0	— American, barrels	20 0–25 0
Grapes (English), Alnwick Seedling, per lb. ...	0 8–0 10	— French, Williams, boxes	7 0– 7 6
— Gros Maroc, per lb.	1 0 —	— French, Williams, crates ..	7 9– 9 6
— Black Hambro, per lb.	0 6– 1 3	— Californian, pr. case ...	8 0–13 6
— Alicante, p. lb.	0 6– 1 0	Pineapples, each	2 6– 3 3
— Gros Colmar, per lb.	0 9– 1 6	Plums (English), ½ sieve (28 lbs.)	7 0– 8 0
— Muscat, per lb.	1 0– 3 0	— French, box	0 8– 1 3
— Lisbon, cases..	8 6– 9 0	— French, ½ sieve	3 0 —
— Almeria barrels	8 0–12 0	— Californian, boxes ..	6 0– 9 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes (French), per dozen ..	2 9 —	Mint, per dozen ...	2 0
Aubergines, per dz.	1 0 —	Mushrooms (house) per lb.	0 6–0 10
Beans, home-grown, p. bushel (40 lbs.)	6 0 —	— outdoor, p. pk.	1 2– 2 0
— Jersey, per lb.	0 4– 0 6	— Buttons, per lb.	0 6–0 10
Beetroot, per bushel ..	1 0 —	Mustard and Cress, per dozen pun.	1 0– 1 6
Brussels Sprouts, per ½ bushel ..	2 0 —	Onions (Valencia), case	6 0 —
Cabbages, per tally	2 0– 2 6	— Egyptian, bag .	3 6 —
— red, per dozen	2 0 —	— pickling, per bushel ..	2 6 —
Carrots French pad	3 0 —	— French, ½ bag	2 6 —
— per bag unwashed ..	2 0 —	— Dutch, bag	3 6
— washed ..	3 0 —	Parsley, 12 bunches	1 0
Cauliflowers, per tally ..	3 0– 3 6	— ½ bushel	1 0– 2 0
Celery, per bundle	0 4– 0 8	Salsafy, per dozen bundles	3 6
Chow Chow, per dozen ..	1 6– 2 0	Savoys, per mat	1 9 —
Cucumbers, p. flat, 2½ dozen ..	6 0– 8 0	Tomatos:—	
— 3 dozen, small	5 6– 7 6	— English, per 12 lbs. ..	3 3– 3 6
— per dozen ..	2 0– 3 0	— small, selected per 12 lbs.	2 6– 3 0
Endive, per dozen	0 9– 1 0	— seconds, 12 lbs. ..	1 0
Horseradish, foreign, per dozen bundles ...	18 0 —	— outdoor, per 12 lbs. ..	3 0– 3 3
Leeks, 12 bundles	1 0 —	— French, per crate ..	2 6– 3 0
Lettuces (French), per dozen ..	1 9 —	Turnips, per cwt	3 0
— French Cos ...	3 0– 4 0	— bags ..	3 0
Marrows, per tally	4 0 —	Watercress, per doz. bunches	0 4– 0 6

Remarks.—Ripe Bananas are a short supply, consequently the value of them has risen considerably. Home-grown fruit is generally plentiful, but trade is bad. *J. H. B., Covent Garden, Wednesday, October 17, 1906.*

Potatos.

Bedfords, 60s. to 65s.; Blacklands, 50s. to 55s.; Kents, 70s. Trade is very dull, although large supplies are arriving. Many of the tubers are badly diseased. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

One still hears complaints about bad trade and low prices, but I believe this is because supplies of everything are over abundant. Ericas have been making very good returns, but prices are sure to drop a little. Mr. Sweet has E. gracilis in the ordinary type, and its white and the pink varieties. Good plants of E. caffra are to be had, and E. hyemalis is coming fairly well flowered. Of these last-named, well plants are realising about 8s. 6d. each. Mr. E. R. ... also has E. hyemalis, and its white variety. Messrs. Lyons & Sons and Messrs. B. Mallar are also sending in good Ericas. Good plants of Chrysanthemums were never seen in such large quantities; the principal varieties are La Pactole, Market White, Mrs. Wingfield (pink), Ryecroft Glory in nice dwarf plants, Nellie Brown (bronze), Geschir's Crimson, Carrie, and Soleil d'Octobre. Marguerites are very good, but with an abundance of good white Chrysanthemums they are not wanted. I still notice some fairly good Cinerarias, Asters and Zonal Pelargoniums. Bouvardias from ...

growers are well flowered. Plants of Spiræa japonica from Mr. Iceton are good. Solanums are over-plentiful and trade in them is dull. Physalis Franchetti on Mr. Seabrook's stands are very good. All hardy plants are now abundant, also climbers, &c. Ferns are well supplied, and several growers of these plants, whose stands have been recently empty, have them again.

CUT FLOWERS.

Chrysanthemums take the lead among flowers. At closing time this morning (Wednesday), large quantities of all grades were left on hand. Among varieties noted, Sunshine, from Messrs. Cragg, Harrison, & Cragg, is one of the best yellow kinds. Soleil d'Octobre is good from all growers. Miss B. Miller is still plentiful and of very good quality. Murillo, from Mr. J. Low, is of a fine pink shade, and Mrs. Scott, from the same firm, is one of the best "whites," but there are other good whites, among which is Miss Fulton. Some fine blooms of the bronze Norman Davis were noted on Mr. Ingamells' stands, also a few very fine blooms of Algernon Davis, the early blooms of this latter variety are of a deep golden yellow shade, and have little of the bronze tint seen in the blooms last season when it was awarded a Certificate of Merit. Bunches of blooms from the open ground come in to the market from some growers in large wagon loads. I was informed that one grower sent in about 30 wagon loads last week, and on Saturday last some were cleared at from 2s. to 4s. per gross of bunches. Roses are still plentiful, but best quality blooms are realising higher prices. Carnations are over-plentiful, and many were unsold at closing time this morning. Lilium longiflorum is again plentiful, and consequently lower in price. L. lancifolium is also plentiful. Pancratiums have only a moderate demand. Eucharis is well supplied, but Stephanotis is a little short. Violets are now abundant. The Parmas are now seen, but they are not of the best quality, "blues" are much better now. Of Michaelmas Daisies some of the small-flowered white varieties sell fairly well; those of the novæ-angliæ type are pretty in the day time, but they close at night, which is a disadvantage. Gaillardias, Dahlias, and other flowers from the open are abundant. Sweet Peas are again seen; they were making about 2s. per dozen bunches. Orchid flowers in various sorts are plentiful, but the demand is not great. *A. H., Covent Garden, Wednesday, October 17, 1906.*

Obituary.

GOTTLIEB EISENBARTH.—The death of this Royal Bavarian Court gardener took place recently at Bamberg, at the age of 85 years. At the beginning of the sixties he was in charge of the Royal Gardens at Schonthal, near Aschaffenburg, and in 1871 he was transferred to Bayreuth, and was given a pension in 1889. During his spare time he was greatly occupied with botanical studies.

E. G. REID, formerly a nurseryman in this country, died at Vienna on September 23 last, at the age of 15 years. In 1888 he introduced to Germany the first large-flowered Chrysanthemums, and helped greatly at a later period in creating an interest in the cultivation of these plants. With the introduction of the cultivation of show blooms, and the best varieties of Chrysanthemums, likewise show and other varieties of the Dahlia and Zonal Pelargoniums the name of Reid is closely connected.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Another warm week. With the exception of two cold nights, on one of which the exposed thermometer showed three degrees of frost, the weather has continued warm for the time of year. The ground also remains warm, the temperature at 2 feet deep being two degrees, and at 1 foot deep three degrees warmer than is seasonable. Rain fell on four days during the week, but to the total depth of only about a quarter of an inch. Since the month began 3¼ inches of rain have fallen, which is nearly half an inch more than the average rainfall for the whole month. During the week about a gallon of rain-water has come through the bare soil percolation gauge, but none through that on which short grass is growing. The sun shone, on an average, for 3½ hours a day, or for half an hour a day longer than is usual at this season. Light airs alone prevailed during the week, the direction being mostly some point between south and west. The mean amount of moisture in the air at three p.m. was five per cent. less than a seasonable quantity for that hour. *E. M., Berkhampsted, October 17th, 1906.*

ENQUIRIES AND REPLIES.

HOT WATER PIPES.—If the substance *M. P.* enquired for on p. 267 for covering hot-water pipes is asbestos, it may be obtained from Leroy and Co., Gray Street, Commercial Road, London, E. *Wells and Sagar, South Kensington.*

SANDSTONE FOR ROCKERY.—Where can I obtain a good-quality sandstone for making a rockery? Preferably, of course, I should like to get it from the nearest place to this neighbourhood. *C. D'A. L., Harpenden, Herts.*

PEACH BUDS.—Having had charge of two Peach-houses for over two years I found that each spring the wood buds commenced to drop from the base of each shoot, leaving only one or two buds at the points. The fruit buds remained intact. The trees carried good crops, and the borders were in first-class condition. What was the cause of the wood buds falling? *S. T. D.*

ANSWERS TO CORRESPONDENTS.

ANTIRRHINUM. *P.* In the specimens you are good enough to send, the flowers are replaced by leaf-buds. There are also traces of fasciation. These are the result of a disturbance in the processes of growth and nutrition, but what has upset the balance we cannot tell.

APPLE SEEDLING: *L. H.* The variety has little or no merit, and would not find favour with fruit growers.

BEGONIA MITE: *W. G. B.* Dip the plants in a weak solution of tobacco water.

CELERY DISEASED: *W. S.* See answer to *A. W.* in our last issue.

COPPER BEECH TREE: *S. A. A.* The insects that you find in the decaying portion of the stem of your Copper Beech are specimens of a well-known beetle and its grubs. It has not, as far as we are aware, any English name. Its scientific name is Sinodendron cylindricum; it is very nearly allied to the well-known "Stag beetle." We believe that it is only found in decaying wood, and not in healthy trees, and that it is not responsible for the condition of your tree, though, to a certain extent, it may have contributed to the rapidity of the decay. Cut away all the diseased part so as to expose the sound wood, which may be well dressed with tar.

CORRECTION. We are informed by Messrs. Lovell Reeve & Co., Ltd., that Hooker's *Handbook of the New Zealand Flora* is not out of print as stated by our reviewer on p. 258, but may still be obtained from the publishers.

FUNGUS ON LAWN. *F. L.* Very difficult to extirpate. Is the lawn sufficiently drained? Try a dressing of wood ashes.

FERNS AFFECTED WITH MITES: *A. H.* The fronds are swarming with a species of acarus or mite belonging, apparently, to the Tyroglyphidæ, but what the exact nature of the injury to the fronds is like, or whether they have been injured at all by the mites, is impossible to say, as the examples were all dried up. Sponge the fronds with Gishurst soap. You might also try the effect of dipping the plants in water at a temperature of 100° Fahr. This method has proved very effective in destroying "Spring tails" (Podura) infecting various species of Ferns.

GRAPES: *E. N.* The bunches are badly shanked and they are also infested with mealy bug. The shanking is probably due to some defect in the border, which should be overhauled during the coming resting season. The mealy bug is best removed from the berries with a brush and methylated spirit.—*Vandor.* The failure is due to some detail in cultivation, probably in connection with the treatment of the roots. There is no fungus present.

HALF-INCH BOXES: *G. G. L.* These are obtainable from any garden sundriesman, or your local nurseryman would procure them for you if desired.

NAMES OF PLANTS: *F. H. R.* Eupatorium Weinmannianum.—*C. E. A.* 1, Spiræa callosa; 2, Chrysanthemum lacustre; 3, Sedum spectabile; 4, Begonia not recognised; 5, Lygodium scandens.—*A Constant Reader.* What you send is not the common Walnut, nor is it Juglans nigra nor either of the Hickories. It is probably Juglans cinerea, but the material is not adequate for determination.—*T. S., Newry.* Oxycoccus erythrocarpus, syn. Vaccinium erythrocarpon.—*Squire.* 6 and 7, Aster vimineus vars.; 8, Aster pyrenaeus; 9, Aster patulus; 10, Vernonia novaeboracensis.—*W. H. D.* 1, Helianthus giganteus; 2, H. laetiflorus.—*J. E. T.* Vitis heterophylla var. humulifolia.—*W. G. B.* Urceolina pendula, syn. aurea, a Peruvian Amaryllid.—*V. A.* 1, Pteris tremula; 2, Ada aurantiaca; 3, Sophronitis cernua; 4, Oncidium pubes; 5, Adiantum assimile; 6, Adiantum tinctum.—*G. H.* Cattleya Bowringiana and Cypripedium carnusianum.—*C. B.* Hedychium Gardnerianum, a warm-conservatory or temperate-house plant.—*E. H.* Cyrtanthus Mackenii, a Cape bulb requiring warm greenhouse treatment.—*R. P. A.* 1, Zephyranthes carinata; 2, Selaginella Wildenovii; 3, Adiantum cuneatum; 4, Adiantum caudatum.—*R. A.* Vitis humulifolia.—*C. B.* 1, Larix leptolepis; 2, Taxodium distichum; 3, Juniperus virginiana.—*Trehane.* Brunsvigia multiflora. Cultivate the plant similarly to the deciduous Hæmanthus in a cool, well-ventilated greenhouse. Until the plant sends up leaves, the roots will require but little water, but afterwards a more liberal supply will be needed. When growth is completed the leaves will turn yellow, and after that stage no water need be afforded the roots until the flower spike appears or growth commences again.—*C. C.* Ailanthus glandulosus.—*J. S.* Adiantum Weigandii.

PEACHES: *C. G. L.* Find out where the ants have their nests, and if it be in the ground pour boiling water over them.

POTATO IN IRON RING: *J. S. U.* Thanks for the specimen, we have received others growing in an iron match box, and one through the neck of a glass bottle.

RETARDING BULBS: *Frost.* You would probably find it too expensive to build a chamber merely for your own requirements. Probably you could obtain some information on the subject from Messrs. Thomas Rochford & Sons, Turnford Hall Nurseries, near Broxbourne, who have had a large chamber in use for some years past.

RICHARDIA: *W. B., Cheshunt.* The failure is caused by Botrytis, the fungus causing Pæonies to droop and die. A dredging of lime on the soil will prevent the fungus passing from the ground up the stem. Diseased plants should be burned.

STRAWBERRY, ST. ANTOINE DE PADOUE: *Strawberry.* This so called perpetual fruiting variety is generally considered to be better than St. Joseph. Under the same cultivation, St. Antoine de Padoue has usually greater size in the berries. The best fruits we have seen from varieties of this type were from Mr. W. Peters, Givon's Gardens, Leatherhead, and were referred to in our issue for September 22 last, p. 216. You cannot do better than adopt the method of cultivation then recommended by Mr. Peters.

VINES: *J. M.* Your Grapes are affected with spot. You have probably kept the vines too moist when the bunches were ripening.

WALNUT TREE: *E. C. C. D.* The Walnut begins to fruit when 10 years old from the seed. London gives it as from 10 to 12 years.

WATER POLLUTED WITH PETROL: *H. S. M.* It will depend entirely on the proportion of petrol which has been admitted to the water. If the proportion is considerable, harm will doubtless result to the plants. Can you not empty the tank and refill it?

WEED ON CLAYEY SOIL: *G. W. W.* The plant is Polygonum Hydropiper, a common weed in most parts. It is an annual, and you should cut it before it seeds.

WINDOW BOXES: *Select.* These should have a depth of from 9 inches to 1 foot, and be provided with supports to raise the base of the box 1 inch above the sill. The boxes must be well furnished with material for drainage. Place some rough material over the drainage to prevent the finer particles of soil from filling the interstices. A suitable compost for window boxes is good turfy loam with a small amount of well-rotted farmyard manure, and a sprinkling of sand to keep the compost porous. You omitted to state what sort of plants you intend to cultivate in the boxes.

COMMUNICATIONS RECEIVED.—W. Miller—Rev. G. H. E.—A. Berger—J. R. J.—Sir J. D. H.—F. Becker & Co.—R. L. C.—A. D. M.—Kelly & Co.—H. E.—E. T. C.—C. J.—Sutton & Sons—H. F., Geneva—F. B.—J. N.—G. A. P.—C. A. P.—G. P.—F. M.—J. C.—S. T. W., with thanks.—S. W. F.—H. J. V.—J. N.—F. M.—A. B., La Mortola—Oxford Education Committee—H. M. V.—I. C. F.—G. A. P.—Messrs. Macmillan—G. H.—G. M. S.—W. J. G.—J. C.—A. E. T. R.—Interested—J. S.—F. L.—F. S.—Walker Lane—J. T. L.—G. P.—H. R.—T. G.—C. C.—T. G. G. H.—J. E. T.—R. O.—Godlee—A. C. J.—J. P. S.—Fencote—H. R.—E. M. V.—H. W. S.—A. C.—A. H.—G. W.—G. H. E.—J. L. R.—J. R. J.—A. M.—E. R.—de B. C.—J. H.—Little and Ballantyne—R. F.—T. R. P. C.—Holbeck (see the next issue).

Exhibition of British-Grown Fruits.

October 16 and 17.—The 13th annual show of British-grown fruits under the auspices of the Royal Horticultural Society was held on these dates, in the Horticultural Hall, at Vincent Square, Westminster. The show was about equal in extent to that of last year, but was not quite so large as in 1904, when some of the exhibits had to be accommodated in rooms upstairs and down, as well as in the hall itself. There is necessarily great similarity in these yearly shows, but could they not be arranged differently each year? A show of fruit cannot hope to vie with one of flowers from a spectacular point of view, but much could be done to relieve the monotony of flat dishes repeated on almost all the tables. The only attempt at a display was seen in the nurserymen's classes, and the effects were poor. Apples were the outstanding feature of the display, and some good Pears were seen, but of Plums there were few, and in many instances they bore evidences of their having been kept back for the show. The present date is also late for Peaches and Nectarines, and only Morello Cherries are available. Grapes were but mediocre, and although most of the berries were perfectly finished and the bunches of good form, they were small and not of the quality that was seen at the provincial shows earlier in the season. The southern, especially Kentish growers, were very successful in the various classes, but it was interesting to note that some excellent fruits were staged from Ireland, while those from Scotland were not lacking in colour. The show was strictly confined to competitive classes. The arrangements were in excellent order, thanks to the capable management of the secretaries, Mr. S. T. Wright, Mr. Reader, and the other members of the society's staff. In the afternoon of the first day a paper was given by Dr. Josiah Oldfield on the "Food Values of Fruit."

On the first day there was a very large attendance of gardeners, but the general public was not so well represented, nor can it be expected that it should be, unless the displays can be made more attractive than the exhibits in fruiterers' shops and the market halls.

DIVISION I.

Fruits Grown Under Glass or Otherwise.

(Open to Gardeners and Amateurs Only.)

Collection of nine dishes.—There were only two exhibits in this class this year, and the 1st prize was awarded to the Earl of Harrington, Elvaston, Derby (gr. Mr. J. H. Goodacre). The Grapes were superior in this exhibit, especially the variety Muscat of Alexandria, the berries being of exquisite colour and finish. The other variety, Gros Maroc, was large in berry and of deep colour, but the bunches were of somewhat small size. His other "dishes" were Coe's Golden Drop Plum, Golden Sea Eagle Peaches, Doyenne du Comice and Triomphe de Vienne Pears, Cox's Orange Pippin and Ribston Pippin Apples, and Countess Melon. The 2nd prize exhibit, from Sir C. Swinfen-Eady, Oatlands Lodge, Weybridge (gr. Mr. Jas. Lock), was also of very fine quality, being very little inferior to that from the Earl of Harrington. The Marguerite Marillat and Pitmaston Duchess Pears, also Humboldt Nectarines and Princess of Wales Peach, were very fine. The fruits of Cox's Orange Pippin Apple were highly coloured, and a fruit of Countess Melon was of good appearance. A fruit of Cayenne Pineapple was somewhat small, and had too much top growth, and the Muscat Grapes lacked colour, though Black Alicante was better in point of colour than size of berry.

Six dishes.—There were five exhibits in this class, the 1st being from the Earl of Londesborough, Market Weighton, Yorks (gr. Mr. J. C. McPherson). His Grapes were of fair quality, but not remarkable for weight of bunch. Allington Pippin Apples were almost perfect specimens, and Cox's Orange Pippins were of very large size (one fruit particularly so) and of good colour. The other dishes were Marie Louise Pear and a seedling Melon. 2nd, J. W. Fleming, Esq., Chilworth Manor, Romsey, Hants (gr. Mr. W. Mitchell); Mrs. Pince Grapes and Muscat of Alexandria were both of good size and quality. 3rd, W. Cooper, Esq., Whittlebury, Towcester (gr. Mr. G. J. Squibbs).

Grapes.

Collection of six varieties.—There was only one exhibit in the class for six varieties, two bunches of each variety, but the fruit shown by J. W. Fleming, Esq., Chilworth Manor, Romsey, Hants (gr. Mr. W. Mitchell), was of very commendable quality, though not remarkable for extra weight of the bunches. Black Hamburgh was shown as medium-sized bunches, with rather small berries, but perfectly coloured; Muscat of Alexandria was perfect in colour and finish, the skins of the berries being remarkably free from blemish, but again they were quite ordinary in point of size; Gros Maroc was of satisfactory size and perfect colour; Black Alicante was well "finished," but the bunches were less good in shape than they should have been, and we have seen larger berries; Mrs. Pince was represented by two rather long bunches, with large berries, coloured very satisfactorily for this somewhat difficult variety; and, lastly, Madresfield Court, though well coloured, was sadly lacking in weight, also in the size of the individual berries.

Four varieties.—These varieties had to be selected from Madresfield Court, Mrs. Pince, Muscat Hamburgh, Muscat of Alexandria or Canon Hall (not both), Mrs. Pearson, and Dr. Hogg. The 1st prize was awarded to an exhibit from C. Bayer, Esq., Tewkesbury Lodge, Forest Hill, London, S.E., who showed Mrs. Pince, Muscat of Alexandria, Madresfield Court, and Mrs. Pearson. There was no competition.

In the following classes two bunches were required of each variety mentioned.—

Black Hamburgh.—In this class, J. W. Fleming, Esq., easily beat the Earl of Harrington in points of size and colour.

Mrs. Pince.—There were six exhibits of the variety Mrs. Pince, and two capital bunches were found for the 1st prize in an exhibit from J. W. Fleming, Esq., which was much superior to the 2nd prize bunches from Col. G. B. Archer-Houblon, Gt. Hallingbury Place, Bishop's Stortford (gr. Mr. Harrison).

Black Alicante.—There were seven exhibits of this popular Grape, and the two bunches shown by W. G. Raphael, Esq., Castle Hill, Englefield Green (gr. Mr. H. H. Brown), were not only superior to any other that was shown, but they were good representatives of the variety; if there was any deficiency, it was in the size of the berries. The 2nd prize was awarded to Earl Stanhope, Chevening Park, Sevenoaks (gr. Mr. C. Sutton), who had admirably-shaped bunches, though lacking the shoulders so characteristic of this variety, and excellent colour; 3rd, C. Bayer, Esq., Tewkesbury Lodge, Forest Hill (gr. Mr. W. Taylor).

Madresfield Court.—Of three exhibits, the best was from J. W. Fleming, Esq., and he was followed by C. Bayer, Esq., and the Earl of Harrington. The exhibits lacked weight more than any other quality.

Any other Black Grape.—There were as many as twelve exhibits in this class, and the varieties shown included Gros Maroc, Lady Downes, Muscat Hamburgh, Gros Guillaume, Gros Colmar, and Appley Towers. The 1st prize was awarded to two magnificent bunches of Gros Colmar exhibited by the Earl of Londesborough, Market Weighton, Yorks (gr. Mr. J. C. McPherson). The individual berries in this exhibit were quite as large as small plums, and the "finish" was perfect. The same variety, from the Studley Horticultural College, Warwickshire (warden, Miss M. C. Faithfull), was awarded the 2nd prize; but the 3rd prize went to two large bunches of Gros Guillaume shown by the Earl of Stanhope, Chevening Park, Kent.

Muscat of Alexandria.—Out of five exhibits, the pair of bunches from the Earl of Harrington was the best. The bunches were shapely, and the berries highly coloured and clean-shinned, but the weight was only moderate; 2nd, H. J. King, Esq., Eastwell Park, Ashford, Kent (gr. Mr. J. G. Weston); and 3rd, Major Hibbert, Ashby St. Ledgers, Rugby (gr. Mr. W. Camm).

Any other White Grape.—The variety selected for receiving the 1st prize was that known as Mrs. Pearson, and it was shown by Sir C. Swinfen-Eady. The same variety obtained the 2nd prize for Mr. A. Benson, Upper Gatton, Merstham (gr. Mr. W. Mancy). Two bunches of the large-bunched variety Trebbiano were shown by W. Maynard, Esq., The Holt, Fedbury (gr. Mr. W. E. Hyde). The weights of the bunches were given as 14lb. 10½oz. and 10lb. 1oz.

Collection of Hardy Fruits.

This class is one that is always included in Division I., and it calls for 30 dishes, distinct, grown entirely in the open, not more than 12 varieties of Apples or eight varieties of Pears being allowed. There were three exhibits, and the first prize was awarded to Sir Marcus Samuel, Mote Park, Maidstone (gr. Mr. W. H. Bacon). The superiority of the exhibit consisted in the greater weight of the Apples and Pears; Allington Pippin and Gascoyne's Scarlet Seedling were among the best. There were also good fruits of Peaches, Plums, Nuts, and other fruits. Major Powell Cotton, Quex Park, Birchington, Kent, had a varied collection of fruits that was little inferior to the one already referred to. The 3rd prize was obtained by Sir Weetman Pearson, Bart., Paddockhurst, Crawley (gr. Mr. A. B. Wadds). The Apples and Pears lacked size, but otherwise the collection was most varied, there being Mulberries, White Bullaces, Blackberries, Crabs, Sloes, Cobnuts, Plums, Raspberries, Morello Cherries, and "Strawberry" Grapes.

DIVISION II.

For Orchard House Fruit and Trees.

(Open to Nurserymen Only.)

Twenty-four feet run of six feet tabling.—In this class, in which there were but two competitors, the exhibits were arranged on tabling of 24 feet by 6 feet in each case; the trees at the back and the gathered fruit in the front. A gold medal was awarded to Messrs. G. Bunyard & Co., Ltd., Royal Nurseries, Maidstone. Their trees measured from 6 to 8 feet in height, and were sparsely trained in most cases. The finest fruits on the trees were, in the case of Apples, Gascoyne's Scarlet, Cox's Orange Pippin, Allington Pippin, and Lord Hindlip. The finest Pears were Doyenne du Comice, Glou Morceau, and Beurré Alexander Lucas.

Of figs there were Negro Largo, Brunswick, Nebian D'Agen, Black Douro; not in every case in a ripe condition. The Apples and Pears were shown in baskets, and were among the finest for size and colouring, clearness of rind and development, being everything that could be desired.

We may mention among Apples of the culinary class King of Tomkins' County, an American variety, that has become much appreciated here; The Queen, Byford Wonder, a very large British fruit of a greenish-yellow tint; Peasgood's Nonsuch, very large and high in colour; Gascoyne's Scarlet Seedling, Emperor Alexander, exceedingly large and highly coloured; Belle de Bois, a large green fruit; Twenty-Ounce, a handsome, yellowish fruit, streaked crimson; Allington Pippin, a very handsome variety of not over-large size, yellow in colour when exposed to the sun; Roundway Magnum Bonum, a prettily striped fruit; Wealthy and The Queen.

Dessert varieties were few and included Cox's Orange Pippin, very fine in size and the colour higher for this variety. Plum the President

... shown in fine condition. It is a dark purple oval fruit. Pears were unusually fine, and consisted of Beurré Bosc, Nouvelle Fulvie, Marie Louise d'Uccle, extra large, Doyenné du Comice, much above the usual size; Président Osmanville, a long, showy green fruit; Conference, Pitmaston Duchess in very superior condition, Beurré Alexander Lucas, Beurré Diel, Durondeau, Conseiller de la Cour, Marie Benoist, some of them 2lb. in weight, and Duchesse d'Angoulême. Of culinary varieties we noted Catillac and Uvedale's St. Germain, both of very large size. Messrs. RIVERS & SONS, Sawbridgeworth, Herts, who showed trees in greater numbers than the exhibitor above mentioned, and these more heavily cropped and of larger size, were also awarded a gold medal of equal value. These remarks apply to Pears and Apples alike. The Pears included Beurré Fouqueray, Doyenné du Comice, Conference, Beurré d'Anjou, Pitmaston Duchess, Conseiller de la Cour, Durondeau, Marie Louise, St. Edmund, Magnate, several of them shown in duplicate. The varieties of Pears shown in baskets, and likewise Plums were very attractive. We may mention of Plums, Princess, a variety raised in Messrs. RIVERS' nursery; Reine le Clerc de Laval, Durondeau, Beurré Diel, some of which were very fine fruits. St. Luke, a ponderous fruit of a russet tint and globular shape; Le Lectier, Magnate, and Beurré Hardy. Of Apples, there were nice examples of Cox's Orange Pippin, King of the Pippins, Gloria Mundi, Gascoyne's Scarlet Seedling, rather pale in colour for orchard house fruits; Crimson Quoining, Pomona, Thomas Rivers, Emperor Alexander, Peasgood's Nonsuch, and Mother. The Plums shown were Primate, President, Monarch, Grand Duke, Rivers' Orange, and Golden Transparent. These varieties of Plums add considerably to the length of the season of Plums.

FRUIT GROWN ENTIRELY OUT OF DOORS.

Twenty-four feet run of six-feet tabling.—1st, Messrs. G. BUNYARD & CO., LTD., Maidstone, with a splendid collection set out in plates, having standards beneath them of various heights. The space occupied was 24 feet by 6 feet. Some dishes of Pears were also shown. For lack of space, it must suffice if we select the finest, i.e., the largest and best-developed varieties, viz., Royal Jubilee, The Queen, Mrs. Barron, Lady Sudeley, Lane's Prince Albert, Winter Ribston Pippin, Cox's Pomona, Mabbott's Pearmain, Stirling Castle, Bedfordshire Foundling, James Grieve, Warner's King, Wealthy, Preston Hall, Sandringham, Lord Derby, Gascoyne's Seedling, Belle de Boskoop, St. Edmund, Chelmsford Wonder, Baumann's Red Winter Reinette, Reinette Superfin, Melon Apple, Bietigheimer, Easter Orange, Swedish Reinette, Court Pendu Plat, Ashmead's Kernel, Improved, Bow Hill, and Queen Caroline, &c. The Pears, Beurré Diel, Princess, Fondante de Thirriot, and Marie Benoist were fine examples. The 2nd prize was awarded to Messrs. H. CANNELL & SON, Swanley and Eynsford, with very superior fruit arranged pyramidally in flat baskets. Very fine were Peasgood's Nonsuch, Gascoyne's Scarlet Seedling, Gravenstein, Summer Quoining, Grenadier, Belle de Pontoise, Colonel Vaughan (syn. Kentish Pippin), Emperor Alexander, Warner's King, Bramley's Seedling, Golden Russet, Hollandbury, The Queen, Dutch Mignonne, Schoolmaster, Pott's Seedling, Atalanta, Cox's Pomona, Allington Pippin, Graham's Royal Jubilee, Chelmsford Wonder, Bull's Golden Reinette, Small's Prince Arthur, Melon Apple, Beauty of Kent, King of the Pippins, and many more. 3rd, J. CHEAL & SONS, Crawley, with varieties of high tints, if not over large. The place of honour was appropriately given to the high-coloured Sussex Apple Nanny, a good dessert fruit, good till the end of the year. Other notable varieties were Allington Pippin, Col. Vaughan, Ross's Nonpareil, Paroquet, Buxted Favourite, High Cannons, Egremont Russet, Forge, Jubilee, Charles Ross, and The Queen.

Fruit arranged on tabling, twelve feet.—The KING'S ACRE NURSERIES CO., Hereford, showed a grand lot of fruit shown in round baskets, the highly-coloured varieties being very conspicuous. There were large fruits observed of Lady Henniker, Pott's Seedling, Jas. Grieve, Bismarck, British Queen, Beauty of Kent, Prince Albert, Lord Derby, Allington Pippin, Peasgood's Nonsuch, Tyler's Kernel, Loddington, Newton Wonder, Stirling Castle, Bramley's Seedling, King's Acre, Bountiful, Sandringham, C. Ross, Sanspareil, Egremont Russet. The Pears consisted of Conference, Huyshe's Victoria, Doyenné du Comice, Beurré Hardy, Marie Louise, Baron de Mello, Nouveau Poiteau, Pitmaston Duchess. (Silver-Gilt Knightian Medal.) Mr. J. BASHAM, Fair Oak Nurseries, Bassaleg, Newport, Mon., with a fine collection, in which Pears vied in number with Apples. In the size of the fruits, there was nothing to wish for, although in colour we have seen them excelled in other years. The Queen, Newton Wonder, Allington Ribston, Peasgood's Nonsuch, Tamplin (a bright-looking local variety), Graham's Royal Russet, New Hawthornden, Mère de Ménage, Ecklinville Seedling, Baumann's Reinette, and Lady Henniker were among the better kinds of Apples. Pears were fair examples of mostly well-known varieties as Triomphe de Vienne, Beurré Hardy, Durondeau, Hacon's Incomparable (very good fruit this, the only exhibit), Marie Benoist, Doyenné du Comice (excellent), Chaumontelle, Beurré Rouge, Marguerite Marillat (the finest of the sort in the show), Emile d'Heyst, Beurré Fouqueray, Gansel's Bergamotte, Président, and Osmanville. (Silver-Gilt Knightian Medal.) 3rd, Messrs. PAUL & SON, The Old Nurseries, Cheshunt, with a collection of Apples and a few Pears, shown in shallow baskets, the centre row being displayed in vase-like baskets having over them a bow covered with sprays of red and white fruited Raspberries. There were many splendid dishes, of which mention may be made of Peasgood's Nonsuch, Annie Elizabeth, Golden Noble, Gold Medal, Stone's, Cox's Orange Pippin, Warner's King, Emperor Alexander, Bismarck, Cellini, and Mabbott's Pearmain. (Silver-Gilt Banksian Medal.)

DIVISION III.

OPEN TO MARKET GROWERS ONLY.

Twelve feet run of six feet tabling.—In this class the 1st prize fell to Mr. G. H. DEAN, Whitehall, Sittingbourne, for a good assortment of Apples and Pears. Fine examples of Apples were observed in Peasgood's Nonsuch, The Queen, Lord Derby, Bismarck, Golden Noble, Worcester Pearmain, Lane's Prince Albert, Bramley's Seedling, Royal Jubilee, Lady Henniker, Allington Pippin, Gascoyne's Scarlet, Cox's Orange Pippin, Cox's Pomona, Rival, and Ribston. The Pears of fine form and size were Beurré Fouqueray, Roi Charles de Printemps (a massive fruit), Conference, Beurré Bachelier, Marguerite Marillat, Duchesse d'Angoulême, Pitmaston Duchess, and Beurré Superfin. 2nd, Mr. W. POUPART, Marsh Farm, Twickenham. The fruit in this exhibit was displayed rather lavishly in boxes and baskets, and consisted of very finely developed and highly coloured examples of Apples, and of duller coloured Pears. The largest Apples were Mabbott's Pearmain, Allington Pippin, Wealthy, Lord Derby, Wellington, King of the Pippins, Mannington, Peasgood's Nonsuch, Lane's Prince Albert, Bismarck, Striped Beefing, Cox's Orange, Alfriston, Mère de Ménage, Jubilee, Warner's King, Barnack Beauty, Alexander, Hormead's Pearmain, Chas. Ross, Bramley's Seedling. The Pears shown notable for clean skins and fine development were Durondeau, Emile d'Heyst, Comice, Beurré Bachelier, Conference, Beurré Sterckmanns, and Beurré Bosc. 3rd, HEREFORD CO-OPERATIVE FRUIT GRADING SOCIETY (manager, W. H. Press), Eign Street, Hereford. The exhibits in this case were shown in a carefully graded manner in boxes holding three to four layers according to size, with wood-wool or soft paper as packing material. Of the varieties shown, we may name Cox's Orange Pippin, King of the Pippins, Worcester Pearmain, Annie Elizabeth, Ribston Pippin, Devon Reds, Blenheim Orange Pippin, Wellington, &c. Small platefuls of other good varieties were shown. The fruits in the boxes were packed for sale to travel long distances without loss or damage.

Apples, twelve dishes distinct—six cooking, six dessert.—Those who exhibited in Classes 17 and 18 were not admissible.—1st, R. M. COURTAULD, Esq., Knight's Farm, Colne Engaine, Earl's Colne, Essex, with an exhibit consisting of kitchen and dessert Apples, viz., Gascoyne's Scarlet, Lord Derby, Bismarck, Newton Wonder, Peasgood's Nonsuch, Allington Pippin, Lane's Prince Albert; and dessert fruits, well-grown and without blemish of Cox's Orange Pippin, Calville Rouge Precoce, Christmas Pearmain and Mannington Pearmain.

DIVISION IV.

FRUITS GROWN ENTIRELY IN THE OPEN AIR.

(OPEN TO GARDENERS AND AMATEURS ONLY.)

Twenty-four dishes of Apples in distinct varieties, sixteen culinary, eight dessert.—Six exhibits were staged, the best being shown by Lt.-Col. BORTON, Cheveney, Hunton, Kent (gr. Mr. J. Whittle). Colour, size, and quality were all good in this collection. The front row was occupied by dessert varieties—Christmas Pearmain (remarkably fine), Mother, Cox's Orange Pippin, Allington Pippin, &c., and at the back were splendid examples of The Queen, Gascoyne's Scarlet, Lane's Prince Albert, Peasgood's Nonsuch, Mère de Ménage (magnificent fruits), and others. 2nd, R. H. B. MARSHAM, Esq., East Sutton Park, near Maidstone, Kent (gr. Mr. Wm. Lewis), with equally choice fruits, but a trifle smaller; Wealthy, Blenheim Pippin, and Gascoyne's Scarlet Seedling were especially good. 3rd, Mr. HENRY WHITELEY, Marlborough Road, Saint Marychurch, Torquay.

Eighteen dishes of Apples, distinct, including twelve culinary and six dessert varieties.—Three more entries than in the preceding class were seen, the nine exhibits forming a very fine display. The premier place was taken by J. G. WILLIAMS, Esq., Pendley Manor, Tring (gr. Mr. F. G. Gerrish), with fruit of remarkable ... SIR MARCUS SAMUEL, Bart., Mote Park, Maidstone (gr. Mr. W. H. Bacon), followed, and O. E. GOLDSMITH, Esq., Summerhill, Tonbridge, Kent (gr. Mr. C. Earl), was awarded the 3rd prize. Mr. WILLIAMS' best dishes were (dessert) Wealthy, Allington Pippin, Blenheim Pippin, and James Grieve, and (culinary) Peasgood's Nonsuch, Bramley's Seedling, and Mère de Ménage. Christmas Pearmain, Sandringham, and Warner's King were finely shown by Sir MARCUS SAMUEL.

Twelve dishes of Apples, distinct varieties, eight culinary, four dessert kinds.—Four exhibits only were seen in this smaller class, the premier collection being shown by C. R. ADEANE, Esq., Babraham, Cambridge (gr. Mr. R. Alderman). A magnificent dish of Tyler's Kernel was seen in this display, which also contained good examples of Bramley's Seedling, Prince Albert, and Hoary Morning. 2nd, Rt. Hon. WALTER LONG, M.P., Rood Ashton, Trowbridge (gr. Mr. W. Strugnell), with highly-coloured fruits.

Culinary Apples.—The best six dishes of cooking Apples among eight competitors were shown by Lt.-Col. BORTON, Cheveney, Hunton, Kent (gr. Mr. J. Whittle), who showed very large examples of Peasgood's Nonsuch, Belle Dubois, Warner's King, Mère de Ménage, Emperor Alexander, and Lord Derby. 2nd, Hon. JOHN BOSCAWEN, Perranwell, Cornwall.

Dessert Apples.—The best half dozen dishes of dessert Apples came from Lt.-Col. BORTON, and Sir MARCUS SAMUEL, Bart., won the 2nd prize. The premier exhibit contained highly-refined examples of Christmas Pearmain, King of the Pippins, Cox's Orange Pippin, Wealthy, &c.

Eighteen varieties of dessert Pears.—Kentish-grown fruits shown by Sir MARCUS SAMUEL, Bart., eclipsed all others, being larger and of remarkable finish. Beurré Hardy, Marie Louise d'Uccle, Directeur Hardy, Doyenné Boussouch, Emile d'Heyst, Beurré Superfin, and Beurré Bosc were, perhaps, the best examples. 2nd, Mr. W. A. Cook (gr. to Sir E. G. LODER, Bart., Leonardslee, Horsham), the writer of our weekly calendar on hardy fruits. 3rd, Major POWELL-COTTON, Quex Park, Birchington.

Twelve dishes of dessert Pears, distinct.—The Rt. Hon. W. H. LONG, M.P. (gr. Mr. W. Strugnell), had the best fruits among four exhibitors, being followed by Mr. A. BASILE, Woburn Park Gardens, Weybridge. 3rd, Lt.-Col. BORTON, Cheveney, Hunton, Kent (gr. Mr. J. Whittle).

Nine dishes of dessert Pears, distinct.—The only exhibit in this class was shown by F. A. BEVAN, Esq., Trent Park, New Barnet (gr. Mr. H. Parr), and he was awarded the 1st prize.

Six dishes of dessert Pears.—Five good displays were seen in this smaller class, the best being those shown by Mr. A. BENSON, Upper

Yatton, Mersham (gr. Mr. W. Mancy), who had very large examples of Pitmaston Duchess, and high-class examples of Marie Louise, Durondeau, Louise Bonne of Jersey, &c. 2nd, F. E. Croft, Esq., Stanstead Abbotts, Ware (gr. Mr. G. Longhurst).

Stewing Pears.—Sir Marcus Samuel, Bart., secured the 1st prize for the largest fruits, having the varieties, Vicar of Winkfield, General Todleben, and Catillac. 2nd, Major Powell-Cotton, Quex Park, Birchington, Kent. 3rd, Mr. Edward Phillips, 78, East Street, Sittingbourne.

Peaches, Nectarines, and Plums.

Peaches grown out of doors.—Although the season is comparatively late for Peaches grown in the open, the half-dozen dishes staged in a class for a dish of one variety of these fruits showed that good Peaches can be, and are, grown in the open. The dish of Sea Eagle shown by C. R. Adeane, Esq., Babraham, Cambridge (gr. Mr. R. Alderman), was very fine, and almost as good was the dish of Lady Palmerston shown by Lord Hillingdon, Uxbridge (gr. Mr. A. R. Allan).

Nectarines.—Two exhibits only were staged in a class for a dish of these fruits, those shown by Sir C. Swinfen-Eady, Oatlands Lodge, Weybridge (gr. Mr. Jas. Lock), and C. R. Adeane, Esq., Cambridge (gr. Mr. R. Alderman), taking 1st and 2nd prizes respectively, the varieties being Humboldt and Victoria.

Plums.—A class was provided for three dishes of these fruits grown under glass; the response was poor, two competitors only staging. The best was adjudged to be that shown by the Earl of Harrington, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre). His varieties were Transparent Gage, Guthrie's Gage, and Coe's Golden Drop. 2nd, Major Powell-Cotton.

A class was also provided for a similar number of dishes of Plums grown in the open. Major Hibbert, Ashby St. Ledgers, Rugby (gr. Mr. W. Camm), was 1st with three excellent dishes of Monarch, Coe's Golden Drop, and Pond's Seedling. 2nd, J. B. Fortescue, Esq., Dropmore, Maidenhead (gr. Mr. C. Page), with Reine Claude de Bavay, Coe's Golden Drop, and Brahey's Green Gage.

The best dish of Coe's Golden Drop was shown by Mr. Fortescue, and the best dish of any other variety of dessert Plums than Coe's Golden Drop was shown by C. H. Berners, Esq., Woolverstone Park, Ipswich (gr. Mr. W. Messenger), who had a very fine dish of Reine Claude de Bavay.

The best dish of cooking Plums was displayed by Mr. J. Vert, Audley End Gardens, Saffron Walden, who had superb examples of Monarch. 2nd, Major Hibbert, with Magnum Bonum.

Cherries and Grapes from the Open.

The class for Morello Cherries was represented by seven dishes, all generally good, for the late season, but those shown by J. G. Williams, Esq., Pendley Manor, Tring (gr. Mr. F. G. Gerrish), were a trifle the largest and plumpest, and thus gained the 1st prize.

A basket of Grapes from the open.—The present has been a favourable season for Grapes in the open, and the 1st prize basket of Chasselas de Fontainebleau was a remarkable exhibit. The berries were well ripened and finished, and almost as large as when grown indoors. It was shown by E. Ascherson, Esq., Pett Place, Charing, Kent (gr. Mr. J. Pitts), who also showed a basket of Grapes (not for competition) from the open of most remarkable size and quality. The 2nd prize was awarded M. Devenish, Esq., Addington Park, Surrey (gr. Mr. J. R. Smith), for a basket of Gamay Noir.

DIVISION V.

Special District County Classes.

Open to Gardeners and Amateurs Only.

These classes, from which trade growers were debarred, were open to growers in specially-named counties, or groups of counties, having as nearly as could be arranged equal climatic and other conditions. A class was, in each case, provided for six dishes of Apples, in distinct varieties, of which four were to be culinary and two dessert kinds, and for six dessert varieties of Pears.

Open Only to Kent Growers.

This important fruit-growing county was awarded a class to itself. Four exhibits of Apples were staged and two of Pears. The best of the former were shown by Mr. E. Chopping, Milton, near Sittingbourne, who had large and highly-coloured fruits, including Cox's Orange Pippin, Allington Pippin, Bismarck, Lord Derby, Peasgood's Nonsuch, &c. 2nd, H. G. Kleinwort, Esq., Merton Park, near Maidstone (gr. Mr. B. J. Mercer), who showed a superb dish of Annie Elizabeth.

The best Pears were shown by C. G. B. Marsham, Esq., Beechy Lees, Sevenoaks (gr. Mr. R. Edwards). They were not over large, but they had splendid finish, Durondeau, Doyenné du Comice, and Beurré Bachelier being the pick. 2nd, Mr. Edward Phillips, 78, East Street, Sittingbourne, who showed Louise Bonne of Jersey almost covered with red colour.

Surrey, Sussex, Hants, Dorset, Somerset, Devon, and Cornwall.

These seven southern counties were represented by seven exhibits of Apples, and only four of Pears. The Apples were generally very fine produce; large, shapely, and well coloured. The best, but not the largest, were shown by B. H. Hill, Esq., Newcombes, Crediton (gr. Mr. G. Lock). Cox's Orange Pippin had a very intense colour, and Bramley's Seedling, Mere de Ménage, and Peasgood's Nonsuch were equally good. 2nd, F. J. B. Wingfield-Digby, Esq., Sherborne Castle, Dorset (gr. Mr. T. Turton), whose fruits included a magnificent dish of Mere de Ménage, the total weight of the six fruits being 7lb. 14oz.; the colour was very pronounced.

Mr. Wingfield-Digby reversed positions with Mr. Hill in the class for Pears, showing Durondeau, Doyenné du Comice, Beurré Superfin, Beurré Alexander Lucas, &c.

Wilts., Gloucester, Oxford, Bucks., Berks., Beds., Herts, and Middlesex.

Rather better competition was seen among these counties, there being nine displays of Apples and six of Pears. J. B. Fortescue, Esq., Dropmore, Maidenhead (gr. Mr. C. Page), showed the best Pears, and Lord Hillingdon, Uxbridge (gr. Mr. A. R. Allan), was placed 2nd, but they reversed these positions in the class for Apples. Mr. Fortescue showed a beautiful half-dozen dishes of Pears, Duchesse d'Angoulême, Beurré Hardy, and Durondeau being almost perfect fruits. The best Apples in the premier exhibit were Cox's Orange Pippin (a splendid dish), Bramley's Seedling, and Peasgood's Nonsuch, the latter being of very large size. The fruit from these counties, taken collectively, was of a high standard of merit.

Essex, Suffolk, Norfolk, Cambridge, Hunts, and Rutland.

These six counties sent seven exhibits of Apples and the same number of Pears. The premier exhibit of Apples, shown by Hon. W. Lowther, Campsea Ashe, Wickham Market (gr. Mr. A. Andrews), contained one of the best dishes of Peasgood's Nonsuch in the show; Worcester Pearmain was remarkably fine, as was also Gloria Mundi; in fact, the exhibit generally was of a very high quality. The adjoining exhibit, shown by Major Petre, Westwick House, Norwich (gr. Mr. G. D. Davison), was awarded the 2nd prize.

Major Petre easily led in the class for Pears, his examples of Durondeau, Doyenné du Comice, and The Conference were not to be equalled in the section. C. H. Berners, Esq., Woolverstone Park, Ipswich (gr. Mr. W. Messenger), was a very creditable 2nd.

Lincoln, Northampton, Warwick, Leicester, Notts., Derby, Staffs., Shropshire, and Cheshire.

The response was not large from these Midland Counties, and only four exhibits of Apples and two of Pears were seen. Mr John Lee, Higher Bebington, Cheshire, staged the best Apples, and J. Bibby, Esq., Hardwicke Grange, near Shrewsbury (gr. Mr. John Tavlor), the best Pears.

Worcester, Hereford, Monmouth, Glamorgan, Carmarthen, and Pembroke.

Five exhibitors contested in the class for Apples, and the same number in that for Pears. Very large examples of these latter fruits won premier position for G. H. Hadfield, Esq., Moraston House, Ross, Hereford (gr. Mr. J. Rick), W. Maynard, Esq., Holt, Ledbury (gr. Mr. W. E. Hyde), securing the 2nd place for fine fruits of choice varieties. His dish of Pitmaston Duchess was noteworthy. Very high colour obtained in the Apples; some examples of Peasgood's Nonsuch were deep red.

Mr. P. M. Whiting, Credenhill, Hereford, who won the 1st prize, showed a magnificent dish of Allington Pippin. 2nd, Mr. J. Paget Norbury, The Norrest, near Malvern.

Welsh Counties Other than those in the Preceding Class.

This proved a very weak class, Sir George Menrick, Bart., Bodorgan, Isle of Anglesey (gr. Mr. W. Pilgrim), had the best in each section among two competitors in each case.

Six Northern Counties of England and the Isle of Man.

This was another poorly-contested class. John Brennand, Esq., Baldersby Park, Thirsk (gr. Mr. J. E. Hathaway), had the best Apples and the best Pears; his examples of Charles Ross Apple were very fine, as were those of King of the Pippins shown by the Earl of Latham, Ormskirk (gr. Mr. B. Ashton), in the 2nd prize exhibit.

Scotland.

Very few entries were staged, there being only one of Pears and four of Apples. The fruit generally compared unfavourably with that from more southern gardens, but the dessert Apples showed no lack of colour, the examples of Cox's Orange Pippin in the 1st prize exhibit of Mr. James Duff, Threave Gardens, Castle Douglas, had a redder tinge than many from Kent.

Ireland.

The only exhibit of any importance from Ireland was the collection of Apples shown by Clement R. Broad, Esq., Aghern, Conna, co. Cork, Ireland. Grand fruits of Allington Pippin and Charles Ross averaged quite half-a-pound each, and they had splendid finish. Bramley's Seedling was also a fine dish.

W. M. Kavanagh, Esq., Borris, co. Cork, showed the only exhibit of Pears, and the quality was but mediocre.

Single Dish Classes.

Apples.

Dessert varieties.—The best dish of *Adams' Pearmain* among fifteen was shown by B. H. Hill, Esq., Newcombes, Crediton (gr. Mr. G. Lock). *Allington Pippin:* Very large fruits, shown by Major Petre, Westwick House, Norwich (gr. Mr. G. D. Davison), won among nineteen. *American Mother:* Highly-coloured fruits shown by D. J. B. Wingfield-Digby, Esq., secured the 1st prize. *Blenheim Pippin:* This old favourite variety was shown by thirty-two growers; some were quite green, others bright red. The best were small, but exquisitely finished fruits shown by H. G. Kleinwort, Esq., Wierton Park, near Maidstone (gr. Mr. B. J. Mercer). *Claygate Pearmain:* The best of six dishes was that shown by G. H. Hadfield, Esq., Moraston House, Ross (gr. Mr. J. Rick). *Cox's Orange Pippin:* Thirty-three dishes of this variety were seen, Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. W. Bound), taking the 1st prize with large, highly-coloured fruits. *Duke of Devonshire:* The best dish of this variety was shown by Hon. John Boscawen, Perranwell, Cornwall. *Egremont Russet:* Mr. John Lee, Higher Bebington, Cheshire, won with the largest specimens among ten exhibits. *The Houblon:* G. H. Dean, Esq., J.P., Whitehall, Sittingbourne, had the best dish of two. *Lord Grizzle:* The best dish of this variety was shown by Mr. R. M. Whiting, Credenhill, Hereford. *King of the Pippins:* Jeremiah Colman, Esq., showed the best dish among twenty-six. *King of Tompkins County:* By far the best dish was that staged by John Brennand, Esq., Thirsk (gr. Mr. J. E. Hathaway). *Lord Hindlip:* Mr. E. W. Cadbick, Caradoc, Ross, Hereford, was awarded the 1st prize. *Margil:* Fifteen dishes were staged, the differences seen being remarkable, Lord Hillingdon, Uxbridge (gr. Mr. A. R. Allan), was awarded the 1st prize. *Mère de Ménage:* B. H. Hill, Esq., Crediton, had the best dish among

two. *Scarlet Nonpareil:* The largest fruits were shown by the Dowager Lady HILLINGDON, Wilderness, Sevenoaks, Kent (gr. Mr. J. Shelton), and these were awarded the 1st prize.

Culinary varieties.—Alfriston: The best dish was shown by Mr. H. H. WILLIAMS, Pencalenick, Truro. *Anna Elizabeta:* A very excellent dish shown by WINGFIELD-DIGBY, Esq., Dorset, took premier honours. *Beauty of Kent:* B. H. HILL, Esq., Crediton, had the best dish of this variety. *Bismarck:* Mr. H. H. WILLIAMS, Truro, won among a dozen exhibitors. *Blenheim Pippin:* Twenty-eight exhibits were seen, size and colour securing for H. G. KLEINWORT, Esq., Wierton House, near Maidstone (gr. Mr. B. J. Mercer), the 1st prize. *Bramley's Seedling:* A beautiful class; Mr. B. H. HILL, Crediton, won out of fourteen entrants. *Dumelow's Seedling:* JEREMIAH COLMAN, Esq., Surrey, was awarded the 1st prize for this variety having fine fruits. *Emperor Alexander:* The best were shown by B. H. HILL, Esq., Crediton. *Gascoyne's Scarlet:* Mr. HILL was again 1st. *Golden Noble:* Mr. H. H. WILLIAMS, Pencalenick, Truro, won with deeply-coloured fruits. *Grenadier:* Mr. JOHN LEE, Cheshire, had the best dish among four. *Hormead Peasgood:* The 1st prize was easily secured by G. H. HADFIELD, Esq., Moraston House, Ross, Hereford (gr. Mr. J. Rick). *Lane's Prince Albert:* This beautiful variety was well shown by twenty-one growers, the 1st prize going to F. J. B. WINGFIELD-DIGBY, Esq. *Lord Derby:* Mr. JOHN LEE, Cheshire, won for large fruits. *Mere de Ménage:* The last-named exhibitor also staged the best of this variety. *Newton Wonder:* Two classes were provided for this variety, one open to northern and the other to southern growers. G. J. GRIBBLE, Esq., Henbow Grange, Biggleswade (gr. Mr. A. Carlisle), won in the former, and Mr. WINGFIELD-DIGBY in the latter section. *Peasgood's Nonsuch:* CHAS. O. WALTER, Esq., Ickleton House, Wantage, Berks, with a magnificent dish of fruits, secured the 1st prize. *Potts' Seedling:* 1st, F. J. B. WINGFIELD-DIGBY, Esq. *Stirling Castle:* 1st, Mr. R. WHITING, Hereford. *Tower of Glamis:* The best of nine dishes was shown by Rt. Hon. Earl of STANHOPE, Chevening Park, Sevenoaks (gr. Mr. C. Sutton). *Warner's King:* Mr. E. W. CADDICK, Ross, Hereford, showed the best dish among a dozen. Mr. WINGFIELD-DIGBY showed the best dish of any other variety than those named, selecting Hollandbury for this purpose.

DESSERT PEARS

Beurré Alexander Lucas: 1st, F. J. B. WINGFIELD-DIGBY, Esq. *Beurré Hardy:* Mrs. St. V. AMES, Westbury-on-Trym (gr. Mr. W. H. Bannister), had the best dish among thirteen. *Beurré Superfin:* 1st prize was secured by Mr. WINGFIELD-DIGBY, with very fine mellow-looking fruits. *Charles Ernest:* 1st, LORD POLTIMORE, Poltimore Park, Exeter (gr. Mr. T. H. Sladey). *Comte de Lamy:* J. T. CHARLESWORTH, Esq., Nutfield, Surrey (gr. Mr. T. W. Herbert) won with large fruits. *Doyenné du Comice:* Of fifteen dishes, the best was that shown by Mr. WINGFIELD-DIGBY. *Durondeau:* A very handsome class, in which F. E. CROFT, Esq., Stumstead Abbotts, Ware (gr. Mr. G. Longhurst), was easily 1st. *Emile d'Heyst:* The premier dish was shown by Col. Hon. C. HARBORD, Gunton Park, Norwich (gr. Mr. W. Allan). *Glou Morceau:* 1st, Major PETRE, Norwich. *Jacques de Malines:* The best examples were shown by the Earl of PEMBROKE, Wilton House, Salisbury (gr. Mr. T. Challis). *Le Lecteur:* The smallest but best finished fruits shown by J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr. Mr. C. Page), were awarded the 1st prize. *Louise Bonne of Jersey:* 1st, Col. SANDFORD, Chipley Park, Wellington, Somerset (gr. Mr. S. Kidley), among 14 entrants. *Marie Louise:* 1st, Col. Hon. C. HARBORD. *Nouvelle Fulvie:* 1st, Mr. WINGFIELD-DIGBY. *Pitmaston Duchess:* Thirteen dishes were staged; the largest and finest were shown by A. P. BRANDT, Esq., Castle Hall, Bletchingley, Surrey (gr. Mr. J. W. Park), and these were given the 1st prize. *Président Drouard:* 1st, Col. H. C. HARBORD. *Thompson's:* 1st, Mr. WINGFIELD-DIGBY, among three. *Winter Nelis:* A well-contested class, ten dishes being staged, the best of Major PETRE, Norwich.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 9.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Rev. Prof. Henslow; Messrs. G. Massee, E. M. Holmes, F. J. Baker, R. A. Rolfe, J. T. Bennett-Poe, C. H. Hooper, G. S. Saunders, and F. J. Chittenden (hon. sec.).

The Late Prof. Marshall Ward.—The following letter from Mrs. WARD to the Chairman was read, and ordered to be inscribed on the minutes.—"Will you kindly convey to the members of the Scientific Committee of the Royal Horticultural Society the gratitude of myself and my children for their kind sympathy and appreciation. Such an honour truly reflects the esteem in which my dear husband was held by his colleagues, and we greatly prize the expression of it from your society. Permit me also to convey our thanks to you personally as chairman."

Blisters on Pear Leaves.—Mr. G. S. SAUNDERS reported that the blisters on the Pear leaves from Ulverston, shown at the last meeting, were the work of the caterpillars of a small moth, one of the Tineinæ, which burrows between the skins of the leaves, feeding on the parenchyma of the leaf. The insect pupates in the soil. Removing the surface soil to the depth of 2 inches and burning or burying it deeply would probably prevent the tree from being attacked again next year. If the tree is infested next season, the affected leaves should be picked off as soon as the attack is noticed; spraying would not be of any use.

Imperfectly-formed Acorns.—Mr. SAUNDERS showed some Acorns in which the growth had evidently been arrested at an early stage. They were from Quercus rubra. No member present knew whether the species produced perfect fruit in this country, but it was thought that the arrest of growth was due to uncongenial climatal conditions.

Intoxication of Bees.—Mr. SAUNDERS also showed some bees, received from a correspondent, which had become stupefied while searching for nectar in the flowers of Kniphofia. They had been unable to make their way out of the tube of the flower and so had perished. Other bees and wasps had obtained the nectar through holes at the base of the floral tube, and had likewise become stupefied, and had fallen to the ground, but, gradually recovering, ultimately quite revived. Mr. MAYSEE said he had frequently noticed the same thing at Kew, and had also seen the wasps eat their way out of the tube after being imprisoned, but had never observed bees doing this.

Æcidium on Abies.—Mr. SAUNDERS showed leaves of Abies Pinsapo having numerous æcidia of the fungus formerly known as Æcidium pseudo-columnare, the white pseudo-peridia of which occur in two rows on the under surface of the affected leaves, which are somewhat paler than the healthy ones, and stand like little cups one-eighth of an inch in depth. The teleuto spore stage is known as Melampsora Caryophyllacearum.

Bulbils on Horseradish.—Rev. Prof. HENSLOW showed an inflorescence of Horseradish with abortive flowers, and upon which were numerous bulbils replacing the flowers.

Cleistogamous Flowers.—He also showed runners of Viola which had during the summer produced cleistogamous flowers only, but which were now bearing normal flowers, thus bearing out the observation he had before made that the production of cleistogamous flowers was largely due to climatal conditions. (Origin "Floral Structures," p. 262.)

"Grit" in Apples and Pears.—Adverting to this subject, which formed the text of a communication at the last meeting, Prof. HENSLOW said: "The theoretical origin of grit I would attribute to the breaking down of the 'stone' of such a fruit as that of Crataegus. In the formation of an 'inferior' ovary by the fusion with the ovary of a receptacular tube (calyx tube), the *inner* epidermis of the tube (as in Prunus), and the *outer* one of the ovary, are totally arrested; so that the central parenchymatous tissues of both are fused into one common layer, the 'pseudocarp.' In forming the fruit of the Pear or Apple there is no true epidermis *inside* the ovary cells; but the core consists of *two* fibrous layers continuent with the external parenchyma. If there be a stone as in haws, this is usually described (as is also a cartilaginous core) as the endocarp. As, however, there is now no true mesocarp, and the stone is only lined with a thin fibrous layer, I would regard this latter as the homologue of the core of a Pear from which the stone is gone. As this is produced by the formative tissue of the pseudocarp (which is continuous from the core to the epidermis), it might be either carpellary or axial; as 'grit' it may be found anywhere.

"Another suggestion in support of the theory arises from affinities. The tribe Pomeæ has nine genera; five have stone fruits, three have berries; one, Pyrus, has 'a cartilaginous, very rarely a crustaceous or bony endocarp'—(Bentham and Hooker). Hence the stone-fruit genera form the majority and probably the ancestral condition; but the stone, or sclerenchymatous cellular tissue, being more or less arrested, has given rise to the baccate instead of a drupaceous fruit, and to a cartilaginous core. If we turn to the tribe Potericæ, of the ten genera included in it at least four have an 'indurated' receptacular tube; while that of Margyricarpus is described as 'coriaceous or nucumentaceous'; and of Bencomia it is said 'the achenes are "closely invested" (arcte concreta) by the globose calyx tube into a drupe with a somewhat bony stone (putamine subosseo).' If, now the tube of the Plum should ever become concrescent with the ovary, we should know that the stone was of a carpellary nature. But, if the tube were similarly fused in Bencomia, we should be wrong if it were equally referred to the ovary."

Beetles in Beech.—Dr. MASTERS exhibited a piece of copper Beech wood much bored by beetles, together with specimens of the beetles, upon which Mr. SAUNDERS will report at the next meeting (see page 284).

Potato perforated by Twitch.—Dr. MASTERS also showed a good example of this peculiarity, which is frequently met with. Some discussion took place as to whether the perforation was due to the dissolving action of an enzyme from the tip of the Twitch rhizome or merely to mechanical pressure of the growing shoot of the grass.

Galls on Salix alba.—Mr. CHITTENDEN showed a branch of the white Willow, in which all the buds had become aborted, and produced masses of small leaves, probably through the attacks of a mite.

Fasciation.—He also showed a specimen of Daphne Laureola very much fasciated, and having very small leaves, so that the whole had much the appearance of a green Cockscomb.

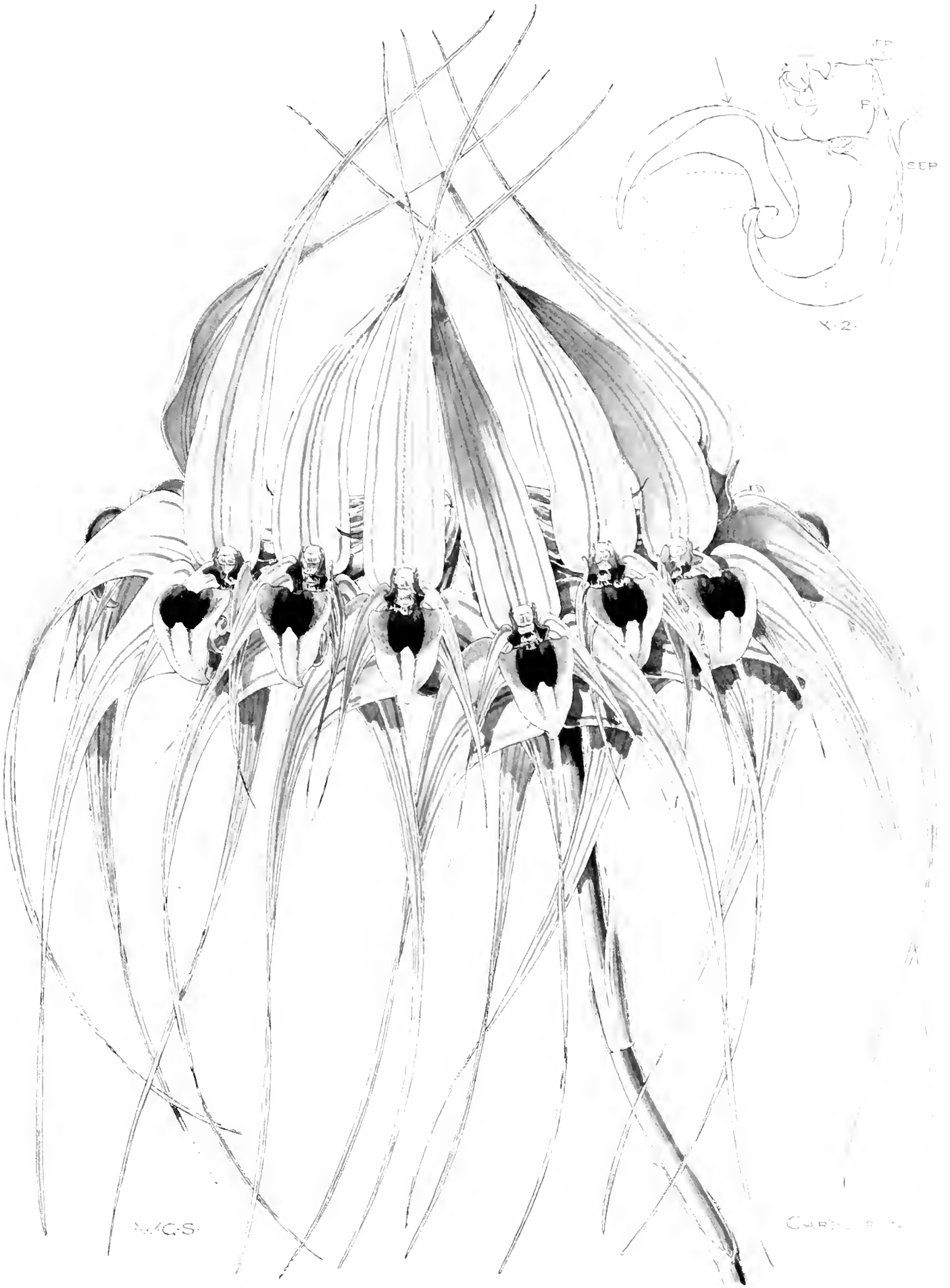
Apples and Pears Diseased.—Apples and Pears attacked by Fusicladium were sent from Chigwell. The Apple had very numerous spots just below the skin, but the cracks and roughnesses usually associated with Fusicladium were not apparent.

GARDENERS' DEBATING SOCIETIES.

BECKENHAM HORTICULTURAL.—An enjoyable evening was spent by the members and friends of this association at the Church House, Beckenham, on October 12, when Mr. M. E. Mills gave a lecture, entitled "Coombe House Gardens." The lecturer gave many beautiful lantern views, taken both in the gardens and in the glass-houses, especially beautiful being the spring and rock gardens.

HOYLAKE, WEST KIRBY, CHESHIRE, AND DISTRICT HORTICULTURAL.—The first of a series of lectures in connection with this society was delivered before a largely attended meeting in the Tynwald Hall, on Thursday evening, the 4th inst., by Mr. R. Horne, of Dawpool, the subject being "The Supplying of Cut Flowers." The chair was occupied by H. J. Falk, Esq., M.A. Mr. Horne described the best and most suitable subjects or species of flowers for personal, domestic, and ecclesiastical decorations. Mr. Horne dealt fully with each subject, describing the origin, dates of importation, the Greek, Latin, and English names of each plant, giving the different times of their flowering, the growing and resting seasons, the application of manures, &c. He also showed how and when to cut the flowers to last the longest time in water. He concluded his lecture with an interesting description of Clematis indivisa lobata. *A. P.*

EGHAM AND DISTRICT GARDENERS'.—The first meeting of the winter session of this society was held on Wednesday, October 3, Mr. A. Sturt in the chair. A large number of members were present to hear Dr. Russell, D.Sc., from Wye College, give a lecture on manures. The lecturer commenced by explaining the meaning of the word manure, and then proceeded to describe the methods of applying manures to the soil from the earliest times to the present day. The manurial substances dealt with were nitrogen, potash, phosphates, sulphates, and lime. The lecturer explained how and where these manures were obtained, how they are assimilated by the plants, and the best kinds for the different soils. The lecturer pointed to the great value of applying lime to soils in which this element is deficient. This lecture is the first of a course of three on manures given under the auspices of the Surrey Education Committee. *F. J. W.*



BULBOPHYLLUM VIRESCENS, A MALAYAN SPECIES. WITH PLAN SHOWING HINGED LABELLUM, MAGN. 2.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle

No. 1,035.—SATURDAY, October 27, 1906.

CONTENTS.

ILLUSTRATIONS.

CHEQUERS COURT, BUCKS.

CHEQUERS PARK, the residence of T. M. Clutterbuck, Esq., is charmingly situated in the centre of Buckinghamshire, some three miles from the small but ancient town—once a parliamentary borough—of Wendover, and about five miles from the county town of Aylesbury. The park consists of about one thousand acres, and comprises hills that attain almost to the dignity of mountains, with sheltered valleys and romantic walks. At the entrance to the park at Great Kimble stands a picturesque lodge covered with creepers and Roses, the ornamental brickwork and twisted chimneys testifying to its antiquity. The drive as it rises from the lower ground to the summit of the hill, in a slight undulation in which the mansion is situated, follows a circuitous route to avoid the steepest gradients, and glimpses of magnificent but constantly varying scenery are obtained. At one moment the lower, richly-wooded slopes, then the severer outlines of the hills, with small trees stunted and gnarled by the fierce easterly winds that in spring and winter oft-times rush through the defiles. Chequers Court is a fine Elizabethan red-brick structure, the colour of the bricks being toned to that delightful neutral tint that age only can produce. It was once surrounded by a moat—a portion of which remains—for were not the inhabitants of the Chiltern Hundreds notorious for their outlawry? and the place needed protection. A prison chamber is still in existence, where, no doubt, evil-doers were consigned whilst awaiting their removal to the county jail. The house also possesses great historical interest as being frequently the residence of the Great Protector, whose fifth daughter married, as her second husband, Sir J. Russell, whose descendants are still the owners of the estate. From whatever aspect viewed, the mansion presents an interesting appearance, though the portion facing south is the most imposing in appearance. The family escutcheon adorns the wall, the striking motto, "Justum tenax," being engraved in letters of stone. Covering the lower parts of the wall are creepers and plants entirely in harmony with the architectural features—good specimens of Wistaria, Honeysuckle, Jasmine, Provence Roses, Rosa devoniensis, the pretty Rêve d'Or Rose, with others. Facing to the south is the lawn, the grass comprising which is in that splendid condition often met with on old English estates. The severity of the lawn is relieved by groups of pillar Roses of the usual climbing varieties, while a portion of the greensward is broken up to form a garden that is laid out in the Italian style. A fountain and basin are also to be found in the centre of the greensward, in which are some choice Nymphæas and other aquatic plants. I must not forget to mention that here are the remains of a gigantic Elm associated with the name of King Stephen. The trunk is but a few feet high, though a slight bronze still testifies to its vitality. The larger branches fell some two hundred years since, and from a portion of these a splendid cabinet was made. A document states that at the time the limbs fell the trunk of the tree was 27 feet in circumference. Near the tree is a good specimen of Liriodendron tulipiferum, which at the time of my visit was in full flower, as was also the herbaceous border on the north of the mansion. Against a background of Lilacs was a long line of noble Delphiniums, and in front Iceland Poppies, Japanese Iris, Tritomas, Pampas Grass, Lilium candidum, Hollyhocks, Helianthemums, and a good selection of Sweet Williams (Pink Beauty being especially noticeable). Antirrhinums, Francoas, Eryngium amethystinum, Spiræa astilboides, Lychnis chalcedonica, and many other subjects. In the vicinity are fine specimens of ancient Yews, in age no doubt contemporaneous with, or even older than, the mansion, also some splendid specimens of Crataegus. The trunk of one specimen of Crataegus orientalis measured 4 feet 4 inches in circumference 3 feet from the ground, and the tree was 25 feet high; while another of Crataegus punctata measured no less than 5 feet 6 inches round trunk, and the branches covered an area of 32 feet. Unfortunately, the branches broke in spite of supports, though healthy-looking growth is springing from the base.

Before describing the garden and the park, I will briefly indicate the treasures the Court contains. The state apartments are spacious with groined ceilings, carvings, and galleries, the light being admitted through stained glass windows exhibiting armorial bearings and other heraldic designs, on the walls being the family portraits, some by eminent painters: ecclesiastics and warriors, fair Lolies and gallant gentlemen, the two most important being those of Oliver Cromwell—one when he was in his prime, the other when a child. On the walls, too, are placed flags and banners, many of which have a national as well as a local interest. The cabinets, armour, clocks, fireplaces, doorways, &c., would delight a connoisseur.

The locality appears to be suitable for the cultivation of the Rose. I noted in the rosary good specimens of the varieties Marquise Litta, Viscountess Folkestone, Mdme. Victor Verdier, Frau Karl Druschki, Papa Gontier, Senateur Vaisse, Caroline Testout, Mdme. Abel Chatenay, Gloire Lyonnaise, Mrs. John Laing, Bessie Brown, Killarney, and many others.

The rockery is picturesque, and must be a beautiful object nearly the whole year. In the spring, flowers Narcissi, Primulas, &c., while later are to be found splendid specimens of Osmunda regalis, many indigenous Ferns, a good selection of Sedums and Campanulas, Hypericums, Bambusas, while Tropæolums, and the old Dundee Rambler Rose roam at will.

In the vineries the Grapes looked healthy and were bearing good crops, the varieties principally grown are Black Alicante, Black Hamburg, and Muscat of Alexandria. Melons looked well, and were of good size and well netted, the variety affording the largest quantity of fruit being Hero of Lockinge. Cucumber plants in frames were well fruited, Sutton's Matchless being remarkably prolific.

The greenhouse contained a magnificent display of Begonias, Streptocarpus, Achimenes, Liliums, Stephanotis, Plumbago capensis, Fuchsias, Zonal Pelargoniums, and many other subjects. There was also a small but choice collection of Cœlogynes, Dendrobiums, and other Orchids. The plants appeared very healthy. In the fernery were good specimens of Adiantum and other exotic Ferns, Dracænas, Palms, Asparagus Sprengeri and A. decumbens, Hoya, &c.

On proceeding to the fruit and kitchen gardens I was shown a handsome Box hedge 4 feet through. On the walls enclosing the gardens hung fair crops of Early Rivers, Princess of Wales and Royal George Peaches, also a good crop of White Heart, May Duke, and Morello Cherries. Pears were also doing very well, the varieties Doyenné du Comice, Williams' Bon Chrétien, and Louise Bonne of Jersey appearing best. The Apple trees have also a considerable quantity of fruit, though the trees suffered from the inclement spring. Of bush fruit, Currants, both red and black, were bearing a remarkable crop, the variety Magnum Bonum especially; also Raspberries, while there was a good prospect of an abundance of Cob nuts. Strawberries (Waterloo, Royal Sovereign, and President) had borne excellent crops. Gooseberries had not done well.

The vegetables also appeared in the best condition. In the vegetable garden stood an old-world picturesque retreat yclept the Shepherd's Lodge, reminiscent of a time when poets sang of the delights of country life, and ladies and gentlemen masqueraded as "gentle" shepherds and shepherdesses. Here, too, was a number of the best varieties of Chrysanthemum in pots, full of promise of beauty for the autumn and early winter.

To the lover of trees the park affords endless pleasure. As is to be expected in Buckinghamshire, the Beeches are of great height, the trunks and principal branches being of massive size, and covering an unusual amount of space. Limes, too, grow in profusion, and, being in full bloom at the time of my visit, the atmosphere was laden with their perfume. An avenue of fine specimens of Limes was indeed a feature of the landscape. There was also a handsome avenue of Walnut trees. The timber on the estate consists principally, in addition to the above, of Elms, Oak, Pines, Weeping Beech, Sycamore, Laburnum, Lilac, Spanish Chestnut, Copper Beech, Cedars, Hollies in variety, &c., Planes; Hazels, Dogwood, Brambles, Honeysuckle, Syringas, &c., formed the undergrowth.

Wild Strawberries were growing, and are to be gathered in their season by the million, while in spring-time Primroses, sheets of Bluebells and Anemones cover the ground. A great feature is the size to which the Box trees attain. These average from 10 to 14 feet in height, with a girth of some 15 inches. In the hollows and damper portions of the woods an admirer of Mosses could gather an interesting collection. The park is a sanctuary for birds, while squirrels, rabbits and foxes also abound.

The unrivalled views both from the valleys and summits of the hills form a unique feature of the estate; indeed, it would be difficult to conceive fairer scenes in this beautiful island of ours. Standing on Baccombe Hill (on which the beacon fires were of yore kindled to apprise the immediate countryside of the occurrence of significant events, or to form a link in the transmission of news of national importance), the summit golden with Stonecrop, Sedum acre, and fragrant with Wild Thyme; on the right Coombe Hill, between 900 and 1,000 feet above the sea-level, on the summit of which is erected the monument, in view of half a county, to the men of Bucks who jeopardised and lost their lives in the late Boer war; to the left, hill succeeding hill, on one of which is Whitecate Cross, formed by the exposure of the chalk substratum, the significance of which is lost in the mists of antiquity. The hill on which we stood for half its height is clothed with magnificent English forest trees rising out of an underwood of Box, while beyond stretches the Vale of Aylesbury, thirty miles in breadth, the old county town indicated but by a mist while the church tower appears as a shadow. In front for some distance the fields are marked by hedgerows like a map, then all is merged, and the eyes wander on till they rest on the hills forming the western boundary of the Vale, and still others are to be discerned in the misty beyond, yet with no obstruction between Baccombe Hill and the western side.

The gardens are under the care of Mr. E. F. Thorne, who must be congratulated on the appearance of every department. *R. T. Hesketh.*

ORCHID NOTES AND GLEANINGS.

CYMBIDIUM ERYTHROSTYLUM (ROLFE).

THE illustration at fig. 115 represents a flower of this beautiful Cymbidium, which was imported from Annam by Messrs. Sander & Sons, through their collector Micholitz, and which flowered for the first time in cultivation in the Royal Botanic Gardens, Glasnevin, Dublin, last year.

At the meeting of the Orchid Committee of the Royal Horticultural Society, on October 9 last, a First Class Certificate was awarded to the plant, a noble specimen of which, with two spikes of five flowers each, one of six and one of seven flowers, was shown by J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), and a smaller plant of it by J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge).

Cymbidium erythrostylum is a valued acquisition, its slender arching leaves constituting it a graceful plant, even when not in bloom, and its flowers, in point of beauty, rank with the best of the genus. The blooms are white, with a slight pink tint, and a few obscure pink spots at the base of the petals. The lip is yellowish, with red-purple lines, and the column crimson.

FIG. 115.—CYMBIDIUM ERYTHROSTYLUM.

LÆLIO-CATTLEYA EXONIENSIS.

A FINE specimen of this well-known hybrid is now in bloom in Sir Trevor Lawrence's collection at Burford. The plant is part of the original specimen which first flowered with Messrs. James Veitch & Sons in 1866, being purchased from them ten years later. The plant at Burford has 52 pseudo-bulbs, each of which is carrying a fine healthy leaf. There are nine leading growths, four of which are now flowering, three have recently bloomed, and the remaining two have flower-spikes just pushing through. It is interesting to note that notwithstanding the numerous fine hybrids which have been raised of late years, L. c. exoniensis × is still one of the most beautiful of its class. In one of the warmest houses at Burford a side stage is filled with about 80 plants of the bright cinnabar-scarlet flowered Habenaria pusilla (militaris). Every plant has produced a flower-spike, a large proportion of them, especially the dwarfer varieties, having exceptionally large heads of bloom. Arranged with them are several plants of the flesh-coloured H. carnea, the pure white H. Susannæ, and the curious but interesting H. longibracteata, which altogether make a very charming display. These Habenarias are well worthy of attention as amateur's Orchids, and it is surprising they are not more extensively cultivated. *W. H. W.*

COLONIAL NOTE.

CEYLON BOTANICAL GARDENS.

FROM the official report for 1905 we learn that great improvements were made at Peradeniya in 1905, chiefly by the opening up of the land east of the fernery to extend the flower garden. This work has been projected for years, but, owing to the presence on the land of unique specimens, has not been previously possible of accomplishment. The east drive has been closed from the fernery to the Royal Palm avenue, and a driving road opened in its place down the Palmyra avenue. The land east of the fernery up to the Bat drive has been partly laid out with walks and flower beds. It is intended to still further extend the flower garden here in 1906.

The branch garden at Badulla was closed in February, and that at Anuradhapura will be closed early in January, 1906, the movable plants being transferred to Maha-iluppalama, where it is intended to open a botanic garden on a small scale on some of the land between the Experiment Station and the superintendent's house. This is at present covered with jungle, and it is intended to cut paths through this and label all the important trees in it to serve as a guide to the "dry" flora of Ceylon, and to plant the forest trees and plants on a clearing in it. These two branch gardens, which were opened by the late Dr. Trimen, have, unfortunately, in no way fulfilled their purpose. The department will now be much more concentrated, and all the stations will be under control of Europeans actually residing upon them, excepting only Henaratgoda and Jaffna and Nuwara Eliya, all of which will be under pretty constant supervision.

HARDY FLOWERS.

ARCTOTIS GRANDIS.

THIS comparatively new annual has done remarkably well this season, the dry weather appearing to suit its requirements, for it has produced quite a wealth of blossom since the end of June. The individual flowers are about the size of a florin, and they are pure white, with a lilac disc. The plant branches freely, and the flowers can be cut with a goodly length of stem, thus enhancing its value for decorative purposes. Towards evening the flowers close, which is not in its favour. I intend using it as dot plants for a large bed next year, where, with an undergrowth of Henry Jacoby Pelargonium or intermixed with the scarlet Lobelia Queen Victoria, it will show to much advantage. Visitors to these gardens inform me that it seeds freely, and the self-sown seedlings come up in numbers the following season. It has not done so here, however, although this autumn I have gathered a quantity of ripe seed, which should be sown by the middle of March, and be placed in a temperature of 60° if plants are required that will flower early in the following summer. Do not apply too much moisture to the seed pans until the seedlings are well through the soil, for the seeds are very woolly, and much of it would damp off. *J. Mayne, Bicton.*

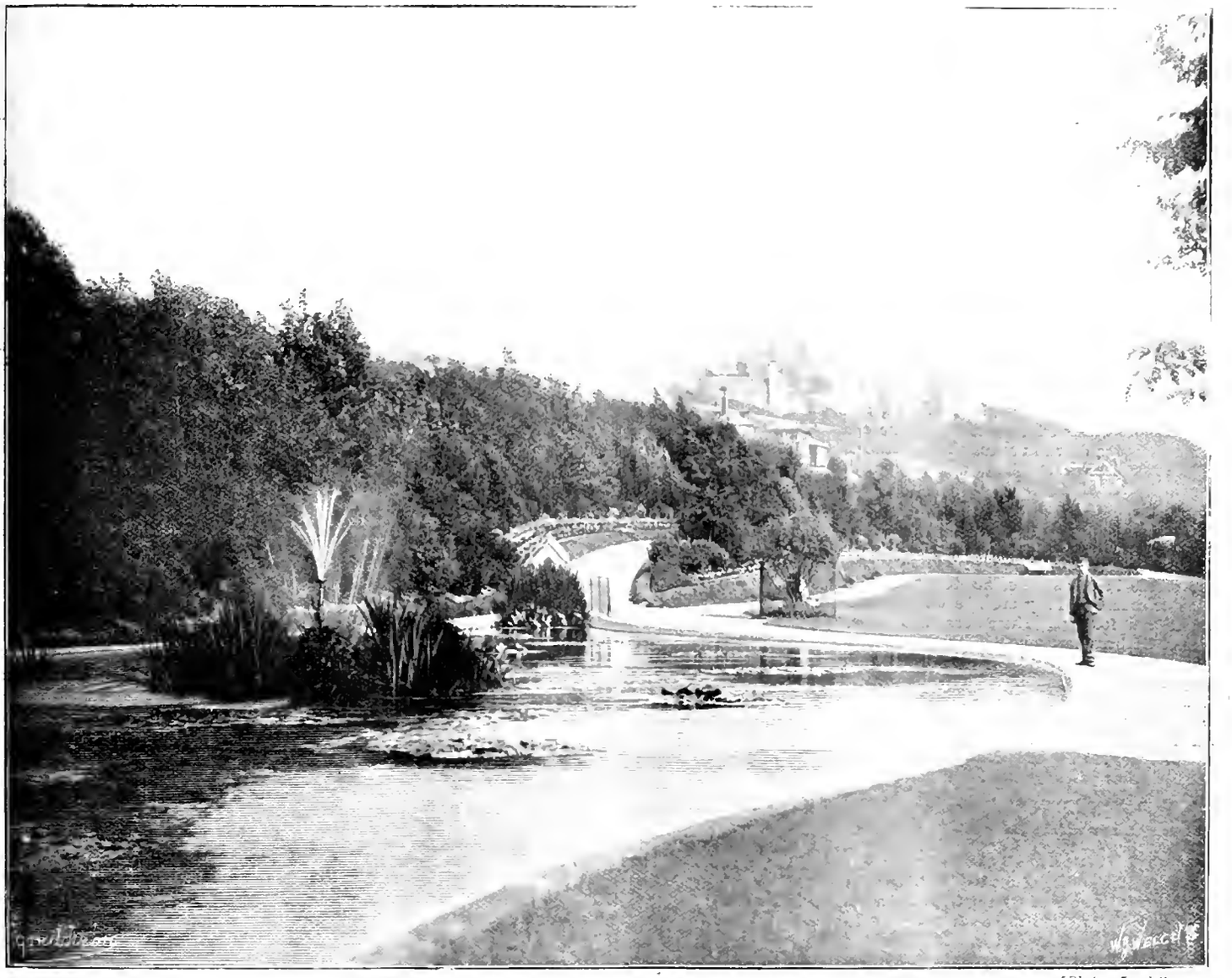
CONNAUGHT PARK, DOVER.

Many visitors to the ancient Cinque Port, we expect, never penetrate to this delightful spot. Access to it is not altogether easy for the stranger however familiar it may be to the resident. Moreover, the "parade" and the piers and other seaside amenities have greater attractions for the multitude destined to live in great cities than have inland resorts; nevertheless, those who scale the steep slopes on which this park is placed will be amply rewarded for their pains. In the first place there is the noble castle, which dominates everything in Dover. On the opposite side of the valley in which the town is ensconced are the imposing "heights," strongly fortified, and then, stretching away inland, are range after range of swelling downs, together with isolated hills, so bold as to call up visions of Mid Wales rather than of East Kent. Commanding this noble prospect is Connaught Park. It occupies, as we have said, the somewhat precipitous slopes to the west of the castle, and is arranged in a series of artificial terraces at different levels, but all connected one to another. Entering at the highest level, the visitor sees before him a straight walk some three-quarters of a mile long. From this terrace the views over the surrounding country are imposing. The terrace itself is sheltered from the bleak winds by a thick belt of Austrian Pines, which are doing well. At their base runs for the whole length of the terrace a herbaceous border—an ambitious effort. The dry season and the drier soil—little but bare chalk—are not altogether favourable to the growth of herbaceous perennials, which do not grow with the vigour which they manifest on a richer, moister soil. Nevertheless, even on the last day of September there was a satisfactory show of flower, among which the numerous varieties of Nicotiana Sanderæ were very noticeable. Every shade of colour from white to deep purple was to be seen, and, in particular, one plant with flowers of the richest, brightest crimson. Sunflowers, Chrysanthemums, Antirrhinums, Riverslea Asters, Plumbago Larpentæ served to make the border still gay.

On a lower level are croquet lawns and space for games, as well as a separate quarter set apart for children's use. Unfortunately, the children seem to prefer to get in the way of their elders, and in their gambols to make havoc of the flower-beds and shrubberies. For the general welfare of the visitors and of the plants it would be well to keep the little darlings to their own playground, where they might shriek their loudest and exercise their limbs to the fullest extent, without injury to plants or annoyance to their elders. At a still lower level are well-kept lawns, with a small piece of water; ribbon beds of Pelargoniums, Begonias, Lobelias were past their best, but one long belt of single Petunias, covering a sloping surface, must be mentioned as being quite one of the most beautiful and effective things of the kind that the writer has ever seen. The individual plants and flowers were not large, but, in the mass, they were most effective, and of all shades of colour from white to crimson and purple. There was some correspondence in the *Times* lately as to the relative merits of the wild and cultivated forms of garden-plants. We think that the severest botanist would acknowledge the surpassing beauty of these Petunias, and those of us who know what the wild form is like must acknowledge with thankfulness the gardener's art and its suitability to the surroundings.

We do not know the gardener's name, but we may cordially congratulate him on the successful manner in which he deals with a garden, the management of which must, from the nature of the environment, offer no little difficulty. We may suggest that more labels are desirable, and that efforts should be made to introduce a larger variety of shrubs known to flourish by the sea. Experiments could be made in this direction at little or no extra cost, and they would furnish a grateful variation to the too plentiful Euonymus.

Dover has another small recreation ground tucked away behind the Town Hall, and also not easy of access. It is simply a square enclosure with a bowling green and borders of herbaceous plants. A small and very dirty stream—it used to be pellucid once—traverses the garden, and by its sides a small rockery has been formed for "Alpines" and similar plants, some of which are labelled. *The Rambler.*



[Photo. Jacolette.

Fig. 116.—The fountain-lawn in the Connaught Park, Dover.

NATURAL VARIATIONS OF GERBERA JAMESONI.

It will probably surprise many, as it certainly surprised me, to learn that Gerbera Jamesoni, the Barberton Daisy, in its natural habitat, occurs not only with red flowers, but also with white, pink, amber, and yellow blossoms. It is wild in the De Kaap Valley, where it was first found by Mr. Jameson, of Natal, who sent it to Mr. Tillett, of Norwich, with whom it flowered in 1887, and it was shortly afterwards figured in the *Botanical Magazine*. Mr. A. E. Graham-Lawrance, of Barberton, who called at Kew a short time ago, assured me that he had collected wild forms of G. Jamesoni with flowers of white, pink, yellow, and other colours. The yellow-flowered variety known as "Sir Michael" was, I understand, introduced from the Transvaal to the Cambridge Botanic Garden, and, by crossing it with the red form, Mr. Lynch obtained his seedlings of various shades of colour. The significance of Mr. Graham-Lawrance's information, here given, is that nature has produced a number of wild, coloured forms similar to those originated at Cambridge. There are so few species in nature with flowers showing much colour variation that this case of the many-coloured Barberton Daisy is interesting. The Barberton Daisy is found wild only in De Kaap Valley, at the headland of which lies Barberton. It has a rhizomatous rootstock, whipcord-like roots, pinnately-lobed, dark, green leaves, and flowerstalks which spring direct from the rhizome. The blooms are bright red, and attain a size of 5½ inches in diameter. The plant is a greedy feeder, thriving well in a loamy soil mixed with sand and rotten stable manure. Here it sprouts with the first spring rains, and blooms almost without intermission till the end of summer, dying down in autumn. Sometimes, in places free from frost, plants will start growing again in the winter, if watered. In addition to the red-flowered one, there are wild forms with yellow, white, white suffused with rose, salmon, terra-cotta, maroon, buff, and peach-coloured flowers. These have all been gathered in the creeks here, and are, no doubt, natural hybrids or crosses. They are like G. Jamesoni in habit and foliage. There are two other species of Gerbera here, one with serrated leaves and pink or yellow flowers, the other with oblong elliptical leaves and ivory white flowers with blackish discs, like little Marigolds. I have myself raised a new variety from seeds, which I have named King Sol. It is of the Jamesoni type, the scape is 22 inches high, the flower 4½ inches across, quite round, erect, coloured rich terra-cotta red, shaded amber. *W. W.*

APRICOTS.

THE cultivator is often called upon to explain the reason why whole shoots and branches die back—and in some cases the trees also—simultaneously and without warning. It is difficult to give a satisfactory reason, for a variety of causes will bring the dreaded evil about. Undoubtedly the chief cause is that at some stage of the tree's growth it has received injury to the shoot which fails either by being twisted in the nursery, from a blow of the hammer when nailing the tree, or from a too tight tie which has cut into the branch and set up gumming. Excessive use of the knife will also cause the mischief, as will also excess of manure, for soil which is too rich in organic manure is prone to cause this evil. Even when all the above evils are avoided, the branches often die, and this must then be attributed to some constitutional cause. The cottager appears to be the man who can claim the greatest success with the Apricot, and his trees are often planted in the ordinary soil of his garden, without any special preparation, against the warmest side of his house. His trees receive no attention, except that the shoots are nailed to the wall, and the superfluous growth removed, which under the circumstances is very little. Planting in the right medium and with efficient drainage and porosity of the soil, are the foundation of success in Apricot culture. Under all circumstances a free mixture of mortar rubble, old plaster, broken tiles, bricks, or oyster shells should be incorporated with the soil; no manure of any description is necessary; in fact, it is fatal to the welfare of young trees, and only when the trees have exhausted all the available food supply in the soil, so that their growth becomes stunted, or when they are maturing a heavy crop of fruits, should manure of any kind be given, and then it should consist of diluted manure water, followed by a heavy mulching of stable litter. Lime is essential to all stone fruits, and where there is a deficiency of this element in the soil, it should be applied during the winter and spring months.

PRUNING.

Pruning is a matter needing careful consideration and much practical skill, for the less the knife is brought into use, the less will be the chances of the tree gumming.

Apricots, in common with most trees bearing stone fruits, are not benefited by much cutting, especially after the foliage has fallen. What little pruning will be required should be performed through the summer, finally finishing during the month of September. The fruit-buds are principally formed on spurs, and the formation of the latter must be induced by the cultivator's skill. In the spring, when the trees commence to grow, disbudding is necessary, for to leave all the growths that form would cause a congested state of growth. Strong shoots that were laid in for extension purposes or for filling blank spaces on the wall will make a large number of lateral growths; any of these that are not required should be rubbed off with the finger and thumb before they get too large, leaving a space of from 4 to 6 inches between those that are left. Shoots not required for extension purposes should be pinched back to four leaves; they will break into growth again, but the secondary growths must be similarly pinched back to two or three eyes, repeating the operation if necessary. After the fruit is gathered, and before the leaves develop their autumn tints, these summer growths must be shortened with a sharp knife to two or three eyes of the first made growth. These spurs will form fruit-buds, from which strong flowers and fruits will be produced the following season. If any of the shoots are required for covering blank spaces on the wall, they should be laid in as growth progresses so as to become thoroughly hardened. When the fruit commences to colour, or even before, these strong growths must be shortened, thereby giving the fruit the extra sap. The proper length to shorten these growths depends on circumstances, but two-thirds may be regarded as usual, for if too great a length is left, the base of the shoots will remain barren of fruit-spurs, and these will not form subsequently.

STOCKS.

The stocks on which the Apricot is grafted are usually the Mussel and the Mussel Plum. I have, however, seen them worked upon the Myrabolan Plum with not altogether satisfactory results, and because the hard, woody nature of this stock does not allow of a free union between the scion and the stock; consequently in a few years' time, the tree either becomes stunted in growth or dies.

VARIETIES.

The varieties of Apricots have increased in number considerably of late years; several of them have evidently emanated from Moorpark as seedlings. Some sorts are not to be recommended, for they are rather shy croppers. Possibly one of the best which has come under my notice among many kinds grown is Luizet. This produces very large, round fruits, of first-class quality. The tree is a vigorous grower and a good cropper. One of the most attractive and at the same time free-bearing kinds is Oullin's Early Peach. The fruits are of first-class flavour and are singularly attractive by reason of their bright red cheek. St Ambroise is a very large fruited kind, larger even than Grosse Pêche and quite equal in flavour. Moorpark by some growers is considered still the best flavoured Apricot, but the tree is certainly not so hardy as Hemskerk or Kaisha; this latter kind is a very free cropper. Powell's Late has, similar to Early Peach, fruits of a very high colour. The tree is a very prolific bearer, and the foliage is strong and healthy and of a dark green colour. This variety bears its fruits in clusters, and in these gardens proves to be a good hardy variety. I have grown other kinds, but I cannot name any that are better than those I have mentioned. *W. H. Clarke, Aston Rowant, Oxon.*

DIOON EDULE.

THERE are fine examples of this handsome Cycad in the Palm house at Kew, both sexes being represented. That illustrated at fig. 117 is a female plant, which bore a fine cone two years ago. The spread of the leaves is fully 10 feet across, the stem being about 3 feet in height and the cone 1 foot in length. It is probable that this and the other largest plant at Kew are two of the original introductions by Messrs. Loddiges of Hackney, who imported stems of this Dioon from Mexico about 60 years ago, when the genus was first described by Dr. Lindley. It was introduced from Mexico by a Mrs. Lavater, who presented to the Royal Horticultural Society a living stem and cone which were recognised by Lindley as being quite distinct from the other genera of Cycadeæ then known. The male plant differs from the female only in having a narrower cone and differently formed scales.

There is only one other species of Dioon known, named D. spinulosum, also a native of Mexico, but it was not described until 1883, when it was introduced into Kew. There is now a splendid specimen of it in the Palm-house which formed the subject of a supplementary illustration in the *Gardeners' Chronicle*, June 17th, 1893, under the name of D. pectinatum. This is a handsomer plant than D. edule. Where space can be afforded for them the Dioons are worth cultivation, as they are noble of aspect and very good-natured under ordinary treatment.

TREES AND SHRUBS.

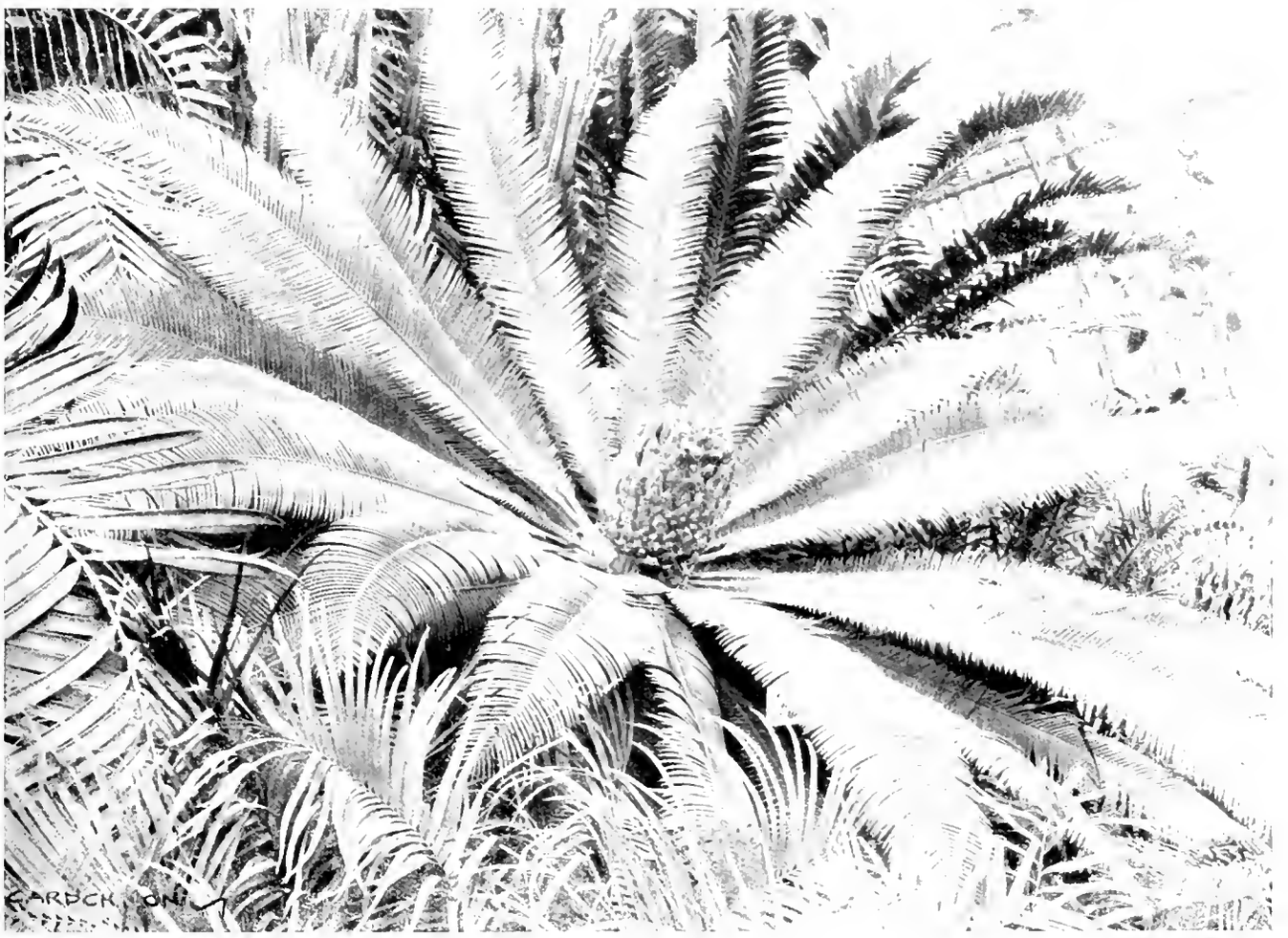
PLANTING HOLLIES.

GREAT care is necessary to ensure the safe transplantation of Hollies. The best time to move them is early in October, or in April or May, but October is the best season, except on heavy lands, when spring-planting is usually the most successful. It is, however, useless to attempt to transplant Hollies that have been growing in one place for a number of years, without the aid of a proper transplanting machine. This necessitates a considerable expense, and requires a certain amount of skill to handle. It is not always possible to have a machine to do the work, so use must be made of the simpler and, under certain conditions, equally effective contrivances to be found in most gardens. The preparation of the plants for removal must be taken in hand one year, or even two years, before they are shifted, and if the work is well done, they can then be moved with safety.

This should take place from the middle of September to the middle of October, when the ground is warm and has become fairly moist from the autumn rains, or, if not practicable then, the middle of April is nearly as good a time. A trench should first be dug round the plant at a distance of from 2 feet to 3 feet from

the stem, according to the size of the plant, and should be taken out to a depth of about 2½ feet, or as far as the roots go down. The side of the trench nearest the plant should be cut down perfectly straight, cutting off all roots cleanly, but taking care not to break the ball of soil. When the bottom is reached the soil can be worked out a little way beneath the tree to cut any perpendicular roots that may be found, but care must be exercised in doing this, or the ball of soil will be weakened and perhaps broken. When this has been done, the trench should be filled in and made firm, the upper half being filled with fresh soil mixed with some well-rotted manure. This will cause the plant to make a large number of fibrous roots near the surface. The plant should afterwards be secured by stakes or ties to prevent it being moved by wind. This is particularly necessary, or the jar will break the soil above. The earth should first be worked out from each side sufficiently to allow of a couple of stout planks being passed under it, and when these are in place to take the weight of the plant the central part can be cleared. The plant can then be lifted bodily on to a low trolley, or carried by hand to its future place. If very heavy, rollers could be put under the planks, and the plant may be drawn to where it is required. It is a good plan to tie a piece of canvas or some matting tightly round the ball before moving it, and care must be taken to lift the plant from below, and not to use the stem for this purpose.

When planting, at least a foot space should be left clear round the plant, so that it will have fresh, good soil to grow in for a year or two. The roots should also be spread out separately, and some fine soil worked amongst them. No manure



[Photo by E. J. Wallis

Fig. 117. Dioon edule at Kew. (For text see page 288.)

as the cutting back of the roots will have weakened the hold of the plant on the ground and rendered it liable to be blown about.

The plant should stand for one year afterwards at least, or two years in the case of large specimens, before being finally moved. To do this operation a trench should be dug outside the former one, and the soil worked out from amongst the roots with a fork. This should not be carried too far back towards the stem, or the ball of soil will be broken, and it is imperatively necessary to keep this intact. The use of the fork is to preserve the younger feeding roots, and at the same time to get rid of some of the soil that would otherwise make the plant very heavy to move. Care will be necessary in working the ground out from under the plant, as there will probably be thick roots found that were not cut off in the previous operation. These should be cut with a sharp knife, or a small saw if they are large, but chopping must be avoided.

need be used, but a good top-dressing will be beneficial in keeping the ground cool and moist.

J. C. B.

TREES AND SHRUBS FOR COLOUR EFFECT.

By a judicious selection of these plants fine effects may be produced both in the pleasure grounds and in the outlying parts of the garden proper. A great deal of the success depends upon the arrangement of the various subjects, but as no hard and fast rule can be laid down, the artist must adapt his plans to circumstances and must be guided by the undulation of the ground or exceptional topographical circumstances. In planting, the great secret to success is to make the whole appear as natural as is possible, and if the designer is fortunate enough to have to deal with undulating ground he has the means of making the landscape appear more beautiful and natural. Quercus rubra var. *aurea* is a variety which should be freely planted in choice shrubberies and near woodland walks. Prunus Pissardi furnishes bright patches of colour to the landscape: indeed, it is one of the most effective trees in this respect. Æsculus Hippocastanum aureum, Robinia aurea pendula, and Acer Negundo californicum aureum, all of which possess foliage of a golden hue, are very picturesque and beautiful subjects, and should be dotted about the grounds. Fagus sylvatica purpurea and Betula alba pendula are two of the most ornamental among trees, and when either is planted as a specimen on the lawn it is sure to excite admiration. I know of no more graceful tree than the weeping Beech Fagus pendula, of which there is a very fine symmetrical specimen at Aldenham, and near it is a tree of Tilia petiolaris; both are much admired.

Acer palmatum sanguineum, A. Negundo variegatum, and A. purpureum are all showy varieties of Maple. Taxus pyramidalis variegatus is a shrub that is much appreciated, both for its bright golden colour and its compact habit of growth. The Hollies are very picturesque plants, whether given a prominent place in the shrubbery or as a single specimen on the grass. Ilex aquifolium, I. argentea marginata, I. ferox argentea, I. aurea-marginata, and I. aurea regina are some of the more beautiful varieties of Hollies. Aucuba japonica and many of its varieties form useful additions to our shrubberies. Corylus avellana purpurea and Cornus alba when planted together in beds produce a very pleasing effect. Prunus Pissardi and Cornus alba are also suitable for this mode of planting. Sambucus racemosa, Rosa rubrifolia, the purple-leaved form of Berberis vulgaris, B. Thunbergi, B. Aquifolium, and Spiræa Douglasi are useful kinds for massing in beds or for growing as single specimens in the shrubbery. For autumn and winter effect

nothing is more pleasing than masses of Cornus sanguinea and Salix aurea; these are best seen when planted near ornamental water. The two last-named plants and Spiræa Douglasi should be pruned down to the ground in April, and they will make new growths from 3 to 4 feet in length during the following summer. Their coloured stems will be beautiful objects throughout the autumn and winter. *James Gardner, Aldenham House Gardens.*

FORESTRY.

LARIX LEPTOLEPIS.

IT is generally admitted that the Japanese Larch has succeeded remarkably well in this country since it was introduced, and if it continues to make the same satisfactory progress as it has already made it will be a great acquisition to persons interested in forestry.

It grows very rapidly, and compares most favourably with the native Larch when grown under the same conditons, and this is a most valuable qualification. A short time since I inspected a considerable number of young plantations on a large property in England, where I had an opportunity of seeing the two kinds growing side by side. Both kinds had done well, but the difference in their annual growth was remarkable; that of the native species averaged from 18 to 24 inches, and the Japanese from 3 to 4 feet. In 10 years the whole of the native Larches in these plantations will be completely overshadowed by their more vigorous growing neighbours. The Japanese species is also superior to the native Larch in other respects. A striking proof of this was recently brought to my notice by a friend, who

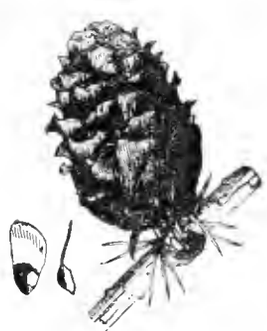


FIG. 118.—CONE OF LARIX LEPTOLEPIS.

has been inspecting the plantations on a high-lying property in North Wales, where the Japanese Larch has been planted in conjunction with Larix europæa, native Larch, and other Conifers.

The plantations referred to are situated from 800 to 1,000 feet above the sea level, at about 10 or 12 miles distance from the sea as the crow flies, and the trees are more or less exposed to the winds blowing from that quarter.

Recently the winds from seaward have been very severe, with the result that the native Larches look as if they have been scorched by fire, and doubts exist as to whether they will recover. The Japanese Larches do not show the slightest traces of having gone through the same ordeal, and are as green and fresh looking as if they were growing in a sheltered nursery bed. The forester in charge of these plantations has had a wide and extended experience, and he attributes the condition of the native Larches to the salt-laden winds blowing from the sea and to these alone. The Japanese Larch in this instance has shown a quality, with which, so far as I know, it has hitherto not been credited. *P. R.*

FRUIT NOTES.

EARLY DESSERT APPLES.

THE note by Mr. Molyneux (p. 299) is interesting. There certainly is a dearth of good-quality dessert Apples during September. He mentions Worcester Pearmain, but I do not consider this a variety of first-class flavour, although it is a sweet, brisk-eating Apple, and one easily assimilated; it has, in addition, a pleasing colour for market, but it lacks the quality and aromatic flavour of our best dessert kinds. I was rather surprised to find this Apple classed in a well-known nursery firm's catalogue under the heading of "Kitchen Apples." I have always regarded it as a purely dessert variety, and of moderate size only. No mention is made by Mr. Molyneux of Kerry Pippin, which, although of small size, is of excellent quality. Devonshire Quarrenden is about equal in flavour to Worcester Pearmain when at its best. By planting King of the Pippins in a favourable position it is possible to have its fruits in condition for the table by the end of September. Half the Apples catalogued as September varieties have only their colour to recommend them, and the newer kinds ripening at this period are not really first-class, although I do not know what the resuscitated Miller's Seedling may prove to be. A good Apple for a slightly later date is Cornish Aromatic: grown as a standard it bears freely, while its quality is first-rate. Some 14 years ago I obtained an Award of Merit at the R.H.S. for an Apple called Kane's Seedling, but afterwards parted with the stock. Although, perhaps, not essentially a dessert Apple, it possessed a pleasant musky perfume, and flavour agreeable to most palates. The tree possessed a good constitution and cropped well, and I should be glad to hear of it again. The general public are very critical in their opinion as to what constitutes a good Apple, and I have known people to prefer Worcester Pearmain to Cox's Orange Pippin, regarding the latter as too firm and solid in eating (!). Wasps have proved very destructive to early Apples this season, and many fruits have been gathered prematurely in order to save the crop. Given another mild winter, we may expect a visitation of these pests next year even more numerous than this. Can no one save us from this scourge? I have done my part individually, but without any appreciable diminution of their numbers. *Geo. Dyke.*

The Week's Work.

THE ORCHID HOUSES.

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

Odontoglossum citrosmum and the various species of Chysis and their hybrids that are still growing may be placed in a warmer atmosphere to complete their new pseudo-bulbs, after which they should be suspended in a light position in the Cattleya house.

Aerides crispum, A. Lindleyanum, Vanda concolor, V. flava, and such plants as grow well during summer in the intermediate house should now be removed to a shady position in the Cattleya house for the winter.

In the intermediate house the varieties of Miltonia spectabilis, M. Moreliana, M. Lamarckiana, M. Bluntii, M. Binotii, M. Veitchii, &c., make a very pleasing show at this season, and last a considerable time in bloom. After the flowers fade the plants require a short season of rest. A cool, dry position in the same house will suit them, and until growth recommences very little water is needed to keep them fresh and plump. Lælia autumnalis and L. albida that have been growing in the cool house are now producing their flower spikes, and may be placed with the L. anceps in the Mexican house. L. Gouldiana, being in full growth and pushing up flower spikes, should be elevated close to the roof glass in the same house. Afford these Lælias copious waterings until the flowers open. L. anceps and its varieties are also throwing up flower spikes, and the compost should be kept moderately moist until the blooms are developed, but afterwards a very small amount of water is needed to keep the pseudo-bulbs plump until such time as growth commences. L. rubescens (acuminata) grows freely when suspended on the lighter side of the warm house. The flower spikes are now showing in the partially-matured growths.

Epidendrum fragrans and E. ibaguense are well worth growing on account of the sweet and pleasant perfume of the flowers, which at certain times pervades the whole house. These and E. radiatum, E. sceptrum, E. xanthinum, E. fulgens, E. floribundum, E. ellipticum, and E. cinnabarinum are in bloom. Such Epidendrums will grow well in an atmosphere of intermediate temperature, and they require to be kept moderately moist at the roots at all times.

Ventilation.—The cool house should be abundantly ventilated, especially through the lower ventilators, when the temperature of the external air is above 45 degrees. The Cattleya, Mexican, and intermediate houses also must still be well ventilated whenever the out-of-doors thermometer registers 50 degrees or more. The East Indian house may be opened moderately at the top for several hours in the middle of warm days.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Liliums.—The early potted bulbs of L. Harrisii that are growing, should be afforded an atmospheric temperature of 55° to 60° by day, and 50° to 55° by night. It will be noticed that green-fly usually attacks the young growths, and should be kept in check by very light and frequent fumigations, or by dusting the leaves and stems with tobacco powder. Apply water very carefully to the roots until the growths have considerably advanced, after which a more liberal supply will be necessary. Many failures in the cultivation of Liliums are due to overwatering the plants in the early stages of growth and before they have made many roots. Avoid the use of strong, stimulating manures, and especially those which contain a large percentage of ammonia, which is very injurious and often causes premature decay in stem and bulb alike. L. speciosum and L. auratum commence to make new roots quite early in the autumn; and when it is seen that the potting materials have become exhausted, the bulbs should be taken out of the pots and shaken clear of the soil, after which they should be re-potted into clean pots and sufficiently provided with good drainage. Use a potting compost of good turfy loam three-fourths, leaf soil and peat in equal proportion making one-fourth, and a liberal addition of sand and charcoal siftings. Any manure that is used should be in a thoroughly decomposed condition. After re-potting the bulbs place them in a cold frame on a well drained coal-ash bottom, or plunge the pots to their rims in coal-ashes and cover the bulbs with two to three inches of cocoanut fibre. Protect them from heavy rains.

Berried Plants.—Rivina humilis is attractive, but if grown in a confined atmosphere will not set its berries freely, nor will the brilliant berries be preserved from falling off when the plants are treated to the drier atmosphere of the dwelling rooms. The first point to be observed is to keep the plants, when growing, close up to the glass, and to afford free ventilation. Apply liquid manure freely to the roots and on no account allow the soil to become dry, or the plants will become even more liable to an attack of red spider. If grown in small pots this plant may be used with much effect for the decoration of the dinner table. Ardisia crenulata and A. crenulata alba are much neglected plants, but when grown as small standards a foot or more high, and treated properly they will set an abundance of red and white berries which have great decorative value. The plants should be occasionally syringed with a weak solution of the XL. sponging wash, which will cause the berries to assume a bright, glossy appearance.

General remarks.—Afford a little Standen's manure or other good fertilizer to Poinsettias, Bouvardias, and other plants which have their roots in a confined space, and are just commencing to flower. Careful attention should now be given to the temperature of the water supplied to plants, which should exceed that of the atmosphere of the house by 5°. Cold rains and showers of hail reduce very considerably the temperature of the water in the tanks at this season of the year.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Pine-Apples.—Plants now ripening their fruits should be placed in a house by themselves, where the atmosphere can be kept dry and warm. But later plants, although bearing fruits, may be kept moist and in a buoyant atmosphere, which will assist the fruits to swell, maintaining for them an atmospheric temperature of

70 degrees at night with a rise of 15 degrees during the day. Whenever the weather is at all favourable, a little air may be admitted to the structure. If this is only possible for an hour or two in the day it will be of advantage to the plants.

Succession Plants must not be in the least excited by heat. The atmospheric temperature for these at night may be 60 degrees, or even lower than that on very cold nights. Keep the bottom heat at 70 degrees, taking care that it does not fluctuate, or the plants may fruit prematurely. The application of water to the plants is a most important item at this time of year. Each plant should be carefully examined before water is given it, always allowing the soil to be rather on the dry side than otherwise.

The suckers should be exposed to all the light possible, and plenty of room should be allowed between the plants. It is not a good practice to apply much heat at the present time, for as the days shorten this would tend to weaken the plants. If a little air be admitted at the top of the pit on fine days its effect will be to improve the health of the plants. They will not require much water, but should not be allowed to get too dry.

Late Grapes.—If these have been given the advantage of a little fire-heat, they will now be thoroughly ripe, and this is advantageous, for Grapes will not keep satisfactorily unless they have ripened perfectly. Ventilate the Vinery freely. Artificial heat need only be used to prevent the atmospheric temperature from falling below 50 degrees. If the houses are not proof against "drip," it is very difficult to keep Grapes good during November, and, providing a fruit-room is available, they had better be cut when thoroughly ripe, and the stems inserted in bottles filled with water. If the Grapes can be thus cut early in the season, it will be of advantage to the vines, because the roots can then be afforded stimulants, and, in addition, the work of cleaning the houses and vine-rods can be carried out earlier than they could be otherwise. Inside and outside borders may also be kept in more natural conditions when the Grapes have all been gathered.

THE HARDY FRUIT GARDEN.

By W. A. Cook, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Autumn work.—Proceed with the root pruning of fruit trees as recommended on p. 243. The soil, owing to the recent rains, is now in splendid condition for working, and it still contains much warmth. Therefore, the sooner this work is accomplished the better will be the result. Burn all rubbish and scatter the ashes on the ground. Push forward with the gathering of all fruits. Most varieties of Apples will now be ready for storing. Late varieties of Pears must be left till they will part readily from the spur. Glou Morceau may be allowed to hang until well into November. Ne Plus Meuris, Josephine de Malines, Olivier des Serres and Bergamotte d'Esperen are all late varieties, and unless these are well ripened before gathering they will not be of good flavour.

Medlars and Quinces.—Medlars are not, as a general rule, ready for gathering before November, but one has to be guided, to a great extent, by the weather. These fruits should be harvested on a dry day, and be laid thinly upon stages. Place the "eye" of the fruits downward, so that the stalks can be readily noticed, as decay always commences at the region of the stalk. Quinces will soon be ready for gathering, and these fruits must also be handled carefully. They are much sought after for making jelly and marmalade.

Late Plums should be all gathered by this date. Coe's Golden Drop can be kept for a considerable time after it is gathered. The fruits should be placed in a dry room, and each should be laid separate. By means of small, new seed trays a lot of these fruits can be stored in a small space. Place a little wood-wool in the bottom of the box, and over this material place a sheet of tissue paper.

Apples, &c.—Orders for fruit trees should be posted as speedily as possible, for early planting is much to be preferred to later, and, generally, autumn planted trees grow much better than those that are shifted in springtime. A good selection of the various fruits should be aimed at, and those that are most valuable either for dessert or for culinary purposes. By a careful selection of varieties Apples can be had nearly all the year round. Varieties furnishing fruits in August are Domino, Lord Grosvenor, and Lord Suffield, and these will carry on the supply till the end of September. To these, for later supplies, may be added Golden Noble, Peasgood's Nonsuch, Loddington Pippin, Warner's King, Blenheim Pippin, Gascoyne's Scarlet Seedling, Lane's Prince Albert, Mère de Ménage, Royal Jubilee, Newton Wonder, Dumelow's Seedling (Wellington), Bismarck, Schoolmaster, Northern Greening, Norfolk Beefin, Barnack Beauty, and King Edward VII. Many more varieties could be added. I have enumerated only the pick of the best cooking varieties fruiting over an extended season. The variety Lord Derby generally crops well and regularly. Dumelow's Seedling or Wellington is also a pretty sure cropper, and is of good quality.

Dessert Apples should not be too large. The following varieties are among the best:—Irish Peach, Beauty of Bath, Lady Sudeley, Devonshire Quarrenden, Wealthy, Margil, St. Edmund's Pippin, Allington Pippin, Kerry Pippin, American Mother, Ribston Pippin, Cox's Orange Pippin, Blenheim Pippin (small, well-finished fruits), Cornish Aromatic, Brownlee's Russet, Sturmer Pippin, and Court Pendu Plat. This last-named is an old Apple, but a good one when the fruits are well developed. I have purposely omitted a lot of market favourites, and some of the more handsome varieties are really only fit for exhibition purposes. Those who require showy varieties in addition to the above should add Baumann's Red Winter Reinette, Barnack Beauty (a perfect picture as a pyramid to-day—October 18), Calville Rouge Precoce, Gascoyne's Scarlet Seedling, Worcester Pearmain, Fearn's Pippin, King of the Pippins, and Red Astrachan. [See also the Apple census published in the *Gardeners' Chronicle* for October 29 and November 5, 1904.—Ed.]

Pyramid-trained trees are very useful, decorative, and extremely prolific in bearing, and if these are frequently root pruned they can be kept to a suitable size for many years. Horizontally-trained trees always look well in a kitchen or fruit garden, and they do not take up much room. They should be trained to neat stakes or Bamboo rods. Iron wire not infrequently causes canker and gumming.

THE KITCHEN GARDEN.

By J. Gibson, Gardener to His Grace the Duke of Portland, Welbeck Abbey, Notts.

Forcing Seakale.—The time has now arrived when the earliest batch may be put in the forcing pit. If the plants have been lifted and exposed to the air for several days this will have partly rested them, and they will therefore force more easily. Very often the earliest plants are not a success through being too immature, and instead of them making growth, they rot off at the base of the crowns. A brisk bottom-heat, accompanied with a little top ventilation is necessary until growth has started, afterwards less air need be admitted, and the plants should be kept in perfect darkness in order that they may become blanched. It is a mistake to think that any kind of soil is good enough in which to force this crop, for observation will soon prove that young roots are rapidly made, and unless good fresh soil is applied the first growth is never so fine—nor the aftergrowth prolonged. After the crowns have been planted a few days water them well, and do not let them suffer from want of moisture afterwards. A bed of leaves made up in a Mushroom-house affords a very suitable means of providing bottom-heat at this season, and if a box sufficiently large to meet the requirements is placed over it, this will contain the heat and moisture better than if it were left exposed, and the growth of the plants will be more abundant and of better quality.

Chicory.—This vegetable may be forced in the same manner as Seakale. It is essential, however, to provide a little ventilation to prevent the young leaves from rotting, which they are very liable to do from excessive moisture. It is best to force Chicory in small weekly batches. The growth is very rapid and unlike Seakale or Rhubarb, the plants grow away freely even when lifted quite green from the open, and with its green foliage still on. It is best to remove this before placing the plants in the hotbed.

Asparagus.—This crop will respond more readily to the influence of heat than Seakale, and no fear need be entertained of getting a quick return. Many force Asparagus in darkness, but I much prefer to do so in a warm house, where it is exposed to light. Instead of making any attempt to blanch the produce as in the French system, I try to get it as green as possible, the heat and moisture doing its part towards ensuring tenderness and good quality. When thus grown it can be eaten almost wholly and no waste is incurred. A hot-bed prepared in a deep frame answers the purpose equally well for forcing, and is even better for use during the spring months.

Weeds.—A final clearing up for the season should be made in the kitchen garden. There is always more or less rubbish, in the shape of leaves, weeds, Asparagus tops, &c., to clear at this season, and these should either be burned, which is best, or wheeled on to a piece of ground which is to be trenched and turned under the bottom spit. Decayed Cauliflower stumps may also be given a resting place on these quarters.

Celeriac.—Lift the crop as soon as possible and store the roots in a fairly dry place, in readiness for immediate use. Frost is detrimental to these roots, which, if left in the ground too long, would probably be spoiled.

Horseradish.—I strongly advise the lifting of this crop annually, and this may be accomplished much in the same manner as Seakale—by saving all the best pieces for use in the kitchen, and the smaller thongs for planting in the spring. The roots can be stored in a covering of leaves out-of-doors, where they will retain their freshness and keep in good condition. This system is much preferable to making a plantation that will last indefinitely, as larger and straighter roots may be thus obtained.

THE FLOWER GARDEN.

By Herbert A. Pettigrew, Gardener to the Earl of Plymouth, St. Fagan's Castle, Glamorganshire.

Roses in the "cut-flower garden."—Wherever an abundance of cut-flowers is required for the furnishing of vases, &c., a portion of the garden should be devoted exclusively for the purpose of their raising. Roses are almost indispensable subjects as cut-flowers, consequently they will be very much in evidence in such a garden. When forming new plantations of Roses, the ground should be thoroughly trenched and heavily manured, and if the situation is at all exposed to winds protection should be afforded by planting some quick-growing hedge, such as one of Privet. The selection of varieties should be very limited, and should be restricted to a few definite colours of the best kinds of Roses adapted for supplying cut blooms. The present fashion in indoor and table decoration with cut-flowers is to eschew a medley of shades, and to employ only one, or at most two colours. Therefore, what is required from the cut-flower garden is a large number of flowers of varieties of certain shades, and not a large variety of mixed colours. In planting, the varieties of certain colours should be kept together to facilitate cutting.

Roses for dry banks.—Many gardens, especially terrace gardens, are often spoilt by a repetition of uninteresting steep grass banks, which are rarely maintained in good order because of the difficulty of mowing the grass, which in the heat of summer is often browned by exposure to the sun. Such banks as these might be made very beautiful by covering them with Wichuraiana Hybrid Roses. These Roses develop luxuriant growths, which are crowned with a profusion of flowers, and the plants readily adapt themselves to such dry, hot situations. Not only are they beautiful while in flower, but their pendulous habit of growth, in combination with their attractive foliage, gives a delightful effect during the rest of the year. The following list contains a good selection: Dorothy Perkins, Jersey Beauty, Gardiner, Alberic Barbier, Paul Transon, Rene Andre, Pink Roamer, Wichuraiana rubra, and the type Wichuraiana alba. When planting, large pockets should be made in the banks, and these should be filled with manure and fresh loam.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS.

SATURDAY,	Oct. 27	Dutch Gard. Soc. meet.
MONDAY,	Oct. 29	Nat. Chrys. Soc. Com. meets at Essex Hall, 3 p.m. British Gard. Assoc. meet at Bournemouth.
WEDNESDAY,	Oct. 31	Kent County Chrys. Soc. Annual Exh. at Blackheath (2 days).
THURSDAY	Nov. 1	Brixton, Streatham & Clapham Hort. Sh. Sydenham Fl. Sh. Linnean Soc. meet.
FRIDAY	Nov. 2	Windsor & Eton Chrys. Sh.
SATURDAY	Nov. 3	Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet. Roy. Hort. Soc. Comm. meet. Ulster Hort. Soc. Chrys. Sh. (2 days). Nat. Amateur Gard. Assoc. meet. Brighton Chrys. Sh. (2 days).
TUESDAY	Nov. 6	Croydon Chrys. Sh. (2 days). West of England Chrys. Sh. at Plymouth (2 days). Bournemouth & Dist. Chrys. Exh. (2 days). Southampton Roy. Hort. Soc. Sh. (2 days). Evesham Chrys. Sh. Nat. Chrys. Soc. Exh. at Crystal Palace (3 days). Putney, Wandsworth & Dist. Chrys. Sh. at Wandsworth (2 days). Cardiff Chrys. Sh. (2 days).
WEDNESDAY,	Nov. 7	Corn Exchange Chrys. Sh., Corn Exchange, Lavender Hill, S.W. St. Peter's Chrys. Sh., St. Albans (2 days). Bath Chrys. Sh. (2 days). Newcastle & Dist. Chrys. Exh. (2 days). Stoke Newington & Dist. Chrys. Sh. (2 days).
THURSDAY,	Nov. 8	Torquay Chrys. Sh. Stirling Chrys. Exh. (2 days). Manchester & North of England Orchid Soc. meets. Exeter Autumn Fl. Sh. Stockport & Dist. Chrys. Exh. (2 days).
FRIDAY,	Nov. 9	Leeds, Pendleton & Dist. Chrys. Sh. (2 days).
SATURDAY	Nov. 10	Dutch Gard. Soc. meet.
MONDAY,	Nov. 12	Unit. Hort. Ben. & Prov. Soc. Com. meet. Birmingham & Midland Counties Chrys. Sh. (3 days). South Shields & N. Counties Chrys. Sh. (2 days).
TUESDAY,	Nov. 13	Winchester Chrys. & Fruit Sh. (2 days). Horticultural Chrys. Sh. at Alexandra Palace (3 days). Liverpool Chrys. & Fruit Sh. (2 days).
WEDNESDAY,	Nov. 14	Roy. Hort. Soc. Exh. Chester Fruit & Fl. Sh. (2 days). Tonbridge Chrys. & Fruit Sh. (2 days). Edinburgh Chrys. Sh. (3 days).
THURSDAY,	Nov. 15	Weston-super-Mare Chrys. Exh. Linnean Soc. meet. Sheffield Chrys. Sh. (2 days). Bradford Chrys. Show (2 days).
FRIDAY	Nov. 16	Bolton Hort. & Chrys. Sh. (2 days). Newport & Dist. Chrys. Sh.
SATURDAY	Nov. 17	German Gard. Soc. meet.
MONDAY,	Nov. 19	Nat. Chrys. Soc. Com. meet. Roy. Hort. Soc. Comm. meet.
TUESDAY	Nov. 20	British Gard. Assoc. Exec. Council meet.
WEDNESDAY	Nov. 21	Darlington Fl. Sh.
THURSDAY,	Nov. 22	Manchester & North of England Orchid Soc. meet.
FRIDAY,	Nov. 23	Aberdeen Chrys. Sh. (2 days).
SATURDAY	Nov. 24	Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—48·4°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, October* 24 (6 P.M.): Max. 61°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, October* 25 (10 A.M.) Bar., 30·4; Temp., 53°; Weather—Fine.

PROVINCES.—*Wednesday, October* 24 (6 P.M.): Max. 57° Cornwall; Min. 46° North Scotland.

SALES FOR THE ENSUING WEEK.

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

MONDAY to FRIDAY—
Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Greenhouses, Piping, Boilers, &c., at Ashburnham Park Nurseries, 480, King's Road, Chelsea, by Protheroe & Morris, at 12.

TUESDAY—
Well-grown Nursery Stock at The Nurseries, Richmond Road, Twickenham, by order of Mr. H. E. Fordham, by Protheroe & Morris, at 1.30.

WEDNESDAY—
Sale of Surplus Nursery Stock at Station Nurseries, Horsham, by order of Mr. Riley Scott, by Protheroe & Morris, at 12.
Azaleas, Palms, Roses, &c., by Protheroe & Morris, at 5.
1,278 cases Japanese Lilliums and other Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 3.

THURSDAY—
Annual Sale of Nursery Stock at Shortlands Nursery, Shortlands, by order of Mr. J. B. Bryant, by Protheroe & Morris, at 11.

FRIDAY—
Orchids, by Protheroe & Morris, at 12.15.

A Question for Nurserymen.

In so far as the proposal to amend a Bill, now before Parliament, is treated as a party question we, of course, can have nothing to say concerning it in these pages. But as it affects much wider interests than those of a mere "party" nature, and as many of our readers, whatever their political proclivities may be, are vitally interested in the matter, we are glad of the opportunity of laying before them the opinions of Mr. Morgan Veitch, a gentleman who has for a long period paid special attention to the subject:—

"Several Acts of Parliament have been passed for the special benefit of those who are tenants of what are technically called Agricultural Holdings. The benefits conferred by these Acts, commonly called The Agricultural Holdings Acts (and which include The Market Gardeners' Compensation Act, 1895), are as numerous as they are important, and include, for instance, such items as (a) a full year's notice to quit, instead of half a year's notice, in the case of a yearly tenant; (b) compensation to a tenant on the expiration of his tenancy for improvements made by him in respect of 27 different matters, including erection, alteration, or enlargement of buildings, drainage and irrigation works, protection of young fruit trees, planting orchards or fruit bushes, manuring land by certain methods, etc.; (c) right to remove various fixtures; (d) landlord's right to distrain limited to one year's rent instead of six years; (e) arbitration in case of dispute between landlord and tenant, with assistance from the Board of Agriculture if necessary.

The question it is now proposed to consider is how far, if at all, nurserymen, seedsmen and florists are entitled to share in those benefits. It will probably come as a surprise to most of those engaged in the nursery or seed trade to find that there is any doubt on the subject, yet when the matter comes to be looked into it will be seen that it is a very serious question whether nurserymen (to take them first) come within the purview of the Acts at all. "Market gardeners" are expressly included in the Acts, but not a word is said in any of them about nursery grounds or nurserymen, and, therefore, unless the term "market-garden" is considered to be wide enough to include nurseries and nursery grounds, it is perfectly clear that nurserymen as such are not entitled to the benefits conferred by these Statutes.

Did the Legislature intend to draw a distinction between a nurseryman and a market-gardener, and, if so, wherein does the distinction lie? That some distinction is *popularly* recognised as existing between the two trades must surely be conceded, although it is by no means easy to say precisely where the line between them should be drawn. In the trade the distinction is well recognised. Many nurserymen do not describe or recognise themselves as market-gardeners, neither do market-gardeners hold themselves out as nurserymen. The definition of a "market-gardener" given in most dictionaries is "one who grows fruit and vegetables for the market" (nothing being said about flowers or plants), and this no doubt exactly corresponds with the meaning ordinarily attached to the words in popular speech. If, however, this definition is to be accepted as a full legal definition of the term as used in the Agricultural Holdings Acts, it will certainly exclude at least a very large proportion of those who call themselves "nurserymen." The latter term seems in strictness to be confined to those whose business it is to grow trees, shrubs, and other plants from the seed or from cuttings for the purpose of transplanting, and who thus may be said to "nurse" plants in their infancy, but in popular language it appears to be understood to include both seedsmen and those who cultivate flowers for the purpose of sale, and slightly different considerations would apply to each of these classes. It is, however, clear that a man carrying on business as a nurseryman in the narrower sense of one who grows from the seed or from cuttings for the purpose of transplanting would not be included under the definition of a market-gardener given above. The same remark applies to those who grow flowers for the purpose of sale, whether wholesale or retail. The case of the seedsman is perhaps not quite so clear, for in its very widest sense seeds have been defined as *fruit*. (See the definitions of "fruit" in the "Century" and "Murray's" Dictionaries.) [This definition will make a botanist stare, for he, of course, considers the seed to be contained within the fruit and perfectly distinct from it.] It might, therefore, possibly be argued that a seedsman answers to the description of one "who grows fruit or vegetables for the market." On the other hand it may be fairly argued that this would be to place an undue strain on the words of the definition, since the words "fruit and vegetables," as there used, are obviously intended to be confined to fruit and vegetables intended for food.

These considerations are sufficient by themselves to raise some doubt as to whether it was the intention of the Legislature to extend the benefits of the Acts to any of the three classes now under discussion, and this doubt is considerably strengthened when we find that in other Acts of Parliament which confer special privileges on "market-gardeners" the Legislature has taken the express precaution to insert additional words extending their benefits to nurserymen. An instance of this is supplied by the Public Health Act, 1875, which provides that in an urban district the occupiers of any land used "as market-gardens or *nursery grounds*" shall be assessed for rates levied under that Act in the proportion of one-fourth part only of the net annual value of the lands. Another example is to be found in the Agricultural Rates Act, 1896, which exempted the occupiers of agricultural land from one-half of the rates payable in respect of buildings and expressly extended this privilege to (amongst others) occupiers of "market-gardens *and* nursery grounds." The express mention of nursery grounds, in addition to market-gardens, in these two enactments would seem to justify the inference that Parliament recognised that a distinction existed between the two classes, and considered that the latter term was not wide enough to include the former; otherwise, why did not Parliament rely merely on the term "market-garden" in these Acts in the same way as it did in the case of the Market-Gardeners' Compensation Act, 1895, and the other Agricultural Holdings Acts?

Again, if the Legislature intended "market-gardens" to include "nursery grounds," how does it happen that the Agricultural Holdings Act, 1900, which confers benefits on agriculturists, refers only to market-gardens, whereas, when it comes to imposing liabilities, the Workmen's Compensation Act, *passed in the same year*, is very careful to provide that for the purposes of that Act "Agriculture" shall include "horticulture" as well as the growth of fruit and vegetables? In further support of the contention that the term "market-gardener" was meant to be confined to those who grow fruit and vegetables intended for food, one may point to the fact that The Market-Gardeners' Compensation Act, 1895 (which is one of the series of Acts included under the general heading of the Agricultural Holdings Acts), while it expressly authorises market-gardeners to remove *fruit* trees which have not been permanently set out, makes no mention of any other class of trees, bushes or shrubs such as nurserymen are in the habit of growing. In like manner, the same Act expressly provides for compensation to be paid in respect of the planting of fruit and vegetables, but not in respect of any other class of crops.

On the other hand, it might be contended that it is difficult to see what reasonable grounds could exist for drawing a distinction between growers of fruit and vegetables and growers of other kinds of garden-produce, and for extending to one class the benefits of the Agricultural Holdings Acts whilst excluding all others.

One of the main objects of the Acts was to mitigate the hardship entailed upon farmers in consequence of the refusal of the Common Law to extend to them the privilege, which it extended to those whom it recognised as "Traders," of removing fixtures erected for the purposes of their business. If the law had recognised the nurseryman as a trader, but not the market-gardener, one could have understood the latter being included in the Agricultural Holdings Acts and the former excluded. But this does not appear to have been the case. The *Common* (or unwritten) Law does not seem to have drawn any such distinction between these two branches of the gardener's calling, and whatever doubts existed at one time as to the precise rights of the trade in respect of the removal of fixtures applied at Common Law to market-gardeners and nurserymen alike. There would, therefore, seem to have been no valid reason for extending the Acts to the one class and not to the other.

It seems more reasonable to suppose that nurserymen find themselves in their present inferior position simply through supineness and want of proper organisation on their part, until recent years, with the result that their interests have inadvertently been overlooked. If one could ignore the significance of the fact that in other Acts of Parliament the Legislature has thought it necessary to insert express words extending to nurserymen the benefits which it was granting to market-gardeners, and could concentrate attention solely on the apparent absence of any valid reason for drawing a distinction between the two classes, it might be possible to argue with some force that the definition of a "*market-gardener*" given in the dictionaries must not be regarded as exclusive as well as inclusive, but that the word, as used in the Acts, must be taken to have been intended to embrace all who cultivate *gardens (using the word in its widest sense) as a regular trade or business as distinct from those who cultivate them for pleasure only*. If this were the correct view, it might follow that the Acts would include both nurserymen and seedsmen, in addition to those who confine themselves to the growing of fruit and vegetables for market.

But there is even room for the controversy as to the meaning of the simple word "*garden*," though, if taken in its popular sense, it should be wide enough to include the holdings of the majority, at any rate, of seedsmen and nurserymen. In connection with this point, it will be well to mention a case under the Allotments Act in which judicial approval was given to the definition of a garden as "a piece of ground enclosed and cultivated for herbs or fruits for food, or laid out for pleasure." This definition would certainly not be wide enough to include the gardens or grounds of the majority of those who call themselves nurserymen or seedsmen, and, indeed, it was expressly held in the very case just alluded to that the grounds of a seedsman did not fall within the term "garden" as used in the particular Act then under consideration. The above quoted definition, however, is much narrower that some of those given elsewhere (e.g., in Murray's and other standard dictionaries), and the case referred to is no authority for applying the narrower construction to the word "garden" when used in other Acts of Parliament, there being special reasons for using the word in its narrower sense in the Allotments Act. Indeed, it would even be possible to extract from the judgments in that case arguments in favour of applying the wider meaning to the word when used in the Agricultural Holdings Acts, but on closer examination the judgments do not throw much real light on the question now under discussion, and cannot be regarded as supporting either the one view or the other.

Enough has now been said to show that the question whether the benefits of the Agricultural Holdings Acts are extended to nurserymen and seedsmen is one which is surrounded by very considerable difficulties, and where so much doubt exists one naturally hesitates to prophesy how the Courts would deal with the matter should it come before them judicially. However, after much hesitation, the writer has reluctantly formed the opinion (now expressed with all due diffidence) that if this question ever comes before the Court to be decided, it is, on the whole, more probable that the decision will be in favour of the view that the term "market-gardener" is confined to those who "grow fruit and vegetables for the market," and that in consequence the majority of seedsmen and florists are excluded from the benefits of the Acts. In any case, it will be seen how grave are the difficulties with which a nurseryman would be confronted should he seek to convince the Court that he is, in effect, a market-gardener within the meaning of the Acts. The arguments against such a contention are at least quite sufficient to induce a wealthy opponent to take the action from Court to Court until the nurseryman found himself confronted with the heavy responsibility of deciding, on the one hand, whether he should abandon the case and pay the costs on both sides (assuming compromise to be impracticable), or, on the other hand, undertake the serious financial risk of making a final fight in the House of Lords. It is certainly curious to note how prolific in appeals to Higher Courts cases concerning the nursery and market-garden trades have been, and it is equally remarkable to find how frequently the judges have held varying opinions among themselves in such cases, and thus after "reserving judgment" for the purpose of considering at leisure the points involved. There is an old legal maxim to the effect that it is desirable for the State to save litigation, and every businessman will agree that prevention is better than cure, and that to have one's legal position definitely secured by statutory authority is distinctly preferable to the problematical chance of winning (or losing) a law suit.

The remedy is simple. Parliament has merely to declare (by means of a clause added to a Bill now before it) that in the Acts passed for the benefit of market-gardeners *the term "Market-Garden" shall be deemed to include also "a Holding or that part of a Holding which is cultivated wholly or mainly for the purpose of the trade or business of a nurseryman or seedsman."* The benefits involved are clearly of such importance as to call very urgently for the slight legislation which is necessary to assure such benefits to nurserymen and seedsmen beyond the possibility of doubt or argument.

As soon as the necessary arrangements are completed, full particulars will be given of a movement undertaken with a view to invoking the early assistance of Parliament.

Finally, it may be of interest to know that, having regard to the vital importance of the subject, the opinion of counsel (Mr. R. E. Moore) has been taken, and such opinion entirely supports the views above expressed. *H. Morgan Veitch.*"

Our Supplementary Illustration represents one of two large plants of Impatiens Oliveri, which have been a great feature in No. 4 greenhouse at Kew during the past two years. The plants are about 9 feet in height, and the same in diameter. They were rooted from cuttings inserted in February, 1904, so that they are about two years and eight months old, and, except for the first two months after planting, they have been in flower during the whole of this time. Professor D. Oliver described the plant under the name of I. Thomsoni in the *Journal of the Linnean Society* for 1906, when dealing with the plants collected by the late Mr. Joseph Thomson on the mountains of Eastern Equatorial Africa. As a Himalayan species had previously been described as I. Thomsoni (see *Journal of the Linnean Society* for 1860 and *Botanical Magazine*, t. 7795), this name had to be dropped, and that of I. Oliveri was substituted, under which latter name it is figured in the *Botanical Magazine*, t. 7960. Only dried specimens appear to have been brought home by Mr. Thomson, and it was left to Sir John Kirk to introduce the plant to cultivation. This gentleman found it growing between 300 and 400 miles inland, by the side of the Uganda Railway, at an elevation of 6,000 to 8,000 feet, the bushes averaging 4 feet in height. He collected seeds, and presented them to Kew, in which institution the plant first flowered in July, 1903. Like most of the Balsams, it is easy of propagation and culture. There is an abundance of seed-pods present on the Kew plants, and seedlings in number have germinated beneath and around the plants, wherever they could obtain root-hold. In a wild state, the flowers are said to come white and to measure 1½ inches across. Under cultivation, however, they show a pale lilac shade, with almost a rosy tint in bright weather, and measure 2½ inches in diameter. In colour and general appearance the flowers very much resemble those of Miltonia vexillaris. The lip of the flower is narrowed into a curved spur 1½ to 2 inches in length. Some persons have found fault with the plant, because the flowers are not particularly showy; but how many other plants are there which will flower for two years continuously? The plant branches freely from its base, and thrives in a cool house. During summer it can be used as a bedding plant, the chief requirement being to have well-grown plants at the start. Another purpose for which it is especially suited is for use as specimen plants in tubs on the terrace, or in sheltered sunny positions around the mansion.

Linnean Society.—The session will open on Thursday, November 1, 1906, at 8 p.m., when the following papers will be read:—1, Sir Dietrich Brandis, K.C.I.E., F.R.S., F.L.S., "The Structure of Bamboo Leaves"; 2, Dr J. G. de Man, "On a Collection of Crustacea Decapoda and Stomatopoda, chiefly from the Inland Sea of Japan, with descriptions of new species"; 3, Prof. A. J. Ewart, D.Sc., F.L.S., "On *Hedwigia ciliatosa*, Hook. f., with remarks on its systematic position." Exhibitions:—1, The President, "Young plaice hatched and reared in captivity"; 2, Mr George Talbot, "Abnormal specimens of *Epeira fasciata*, Cl[erck]."

THE BOARD OF AGRICULTURE AND FISHERIES.—The President has appointed Professor THOMAS HUDSON MIDDLETON, M.A., M.Sc., to be an Assistant Secretary to the Board in the place of Dr. W SOMERVILLE, resigned.

VIKING CLUB.—The Viking Club, a society for northern research, is proposing to issue a quarterly journal of "Miscellany and Records." The object is to bring together materials for the history of Orkney and Shetland from all available sources. This should appeal to all interested in the neighbourhood, and its Norse and other histories and legends. All desiring to co-operate in the scheme should apply to the hon. treasurer, Mr. A. JOHNSON, 59, Oakley Street, Chelsea. We hope the natural history including the details relating to the cultivation of hardy plants, fruits, and crops generally in these northern islands will receive attention.

SOUTH EASTERN AGRICULTURAL COLLEGE.—We are informed that the annual meeting of the governors was held at the Charing Cross Hotel on Monday, October 22, the Right Hon. Lord ASHCOMBE presiding. The principal (Mr. M. J. R. DUNSTAN) reported that the autumn term commenced on October 1 with 113 students (the largest number yet recorded) in residence. Amongst the appointments on the staff were Mr. S. S. PARKINSON as lecturer in Botany, Mr C. A EALAND as lecturer in geology, and Mr J. MORISON as farm superintendent.

FLOWERS IN SEASON.—From Mr. SMITH'S interesting nursery at Newry come flowers of Escallonia pterocladon, an evergreen species which blooms throughout the summer and autumn. Its dark green, shining leaves render it attractive at all times. The white flowers are disposed in long clusters at the ends of the shoots. Mr. SMITH also sends a spike of a hybrid Verbascum flowering profusely for the second time this season, the new flowering shoots emerging from the old stem between the remains of the old flowers. Such renewals of growth are to be expected after such a season as we have had.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.—There will be a meeting of the association at Winchester House, Old Broad Street, E.C., on November 6, at 7 p.m., when Mr. T. W. SANDERS, F.L.S., will deliver a lecture on "Beautiful Gardens," illustrated with limelight views.

BRITISH GARDENERS' ASSOCIATION.—A meeting will be held at Bournemouth on Monday next, October 29, when Mr. E. F. HAWES will attend as a delegate from the Executive Council. Other meetings will shortly be held at Richmond (Surrey) and at Bath. The Executive Council invite further applications from districts desirous of holding similar meetings.

THE EUROPEAN GOOSEBERRY-MILDEW ATTACKING THE RED CURRANT.—Mr. E. S. SALMON sends us the following communication. "Mr. C. J. ALEXANDER, a student of Wye college, directed my attention a few days ago to a white mildew on the leaves of some Red Currant bushes in the college fruit plantations. Conspicuous white patches of mildew occurred on the upper surface of the leaf, and on these, as well as scattered over the under surface, the minute blackish fruit-conceptacles (perithecia) of the fungus were being formed. On microscopical examination the fungus proved to be the European Gooseberry-mildew (Microsphæra Grossulariæ [Wallr.] Lev). From each conceptacle a number of minute processes or appendages radiate, while inside the conceptacle is a number of little sacs, or asci, each containing four or six winter spores (oospores). Each appendage is branched at its apex in a repeatedly dichotomous manner, characteristic of the species. Creeping over the surface of the leaf, and bearing the fruit-conceptacles (perithecia), is the mycelium or spawn of the fungus, composed of a number of very fine white threads or hyphæ, which are branched and interwoven. Each hypha sends at frequent intervals a sucker or haustorium into an epidermal cell of the leaf, by means of which the fungus obtains its nourishment, but the whole of the fungus is otherwise external to the tissues of the plant on which it is feeding. Hitherto this mildew has been recorded in Europe only on the Gooseberry, and it seems curious, considering how frequently Red Currants and Gooseberries are grown together, that the former plant has remained unattacked—or has never been recorded as being attacked—until this season. In the present instance the Red Currant trees attacked (of which there were some dozens) are young trees of the Raby Castle variety, and stand close to Gooseberry bushes attacked by the same fungus. The European Gooseberry-mildew, when it attacks Gooseberry bushes severely, may cause a premature shedding of the leaves; this can, however, be prevented by spraying with a fungicide, viz., potassium sulphide ('liver of sulphur'), 1 oz. to two or three gallons of water. The same fungicide should be used if the mildew becomes troublesome to Red Currants. It may be noted that this season, both in Ireland and in Denmark, the Red Currant has been attacked—for the first time in Europe—by the American Gooseberry-mildew (Sphærotheca mors-uvæ [Schwein.] Berk.). I should be very glad if anyone meeting with a mildew on the Red Currant would kindly forward me a specimen, with particulars of the outbreak, to the address given below.—E. S. SALMON, F.L.S., South-Eastern Agricultural College, Wye, Kent."

UNIVERSITY OF LONDON.—Mr. FRANCIS DARWIN, M.A., M.B., F.R.S., is delivering a course of six lectures on "The Physiology of Movement in Plants," at the Chelsea Physic Garden, at 4.30 p.m. The first lecture was delivered on October 19 on "The principle of association: stimulus in relation to adaptation," and the rest are as follow:—Lecture II. (October 26), "Some questions regarding physiological nomenclature and method." Lecture III. (November 2), "The modern methods of analysing gravitational stimulus and reaction." Lecture IV. (November 9), "The localisation of the perceptive region in heliotropic and geotropic organs." Lecture V. (November 16), "The mechanism of perception in heliotropic and geotropic organs." Lecture VI. (November 23), "On diageotropic and diaheliotropic organs."

THE "CORRUPTION" BILL.—We hear that there is a feeling among some members of the horticultural trade that a discount of 5 per cent., payable to the gardener, should be treated as a recognised legitimate custom, and not be deemed "corrupt." Of course, if the master who pays the bill is aware of the practice, and raises no objection, the odious word corruption would have no place. The master in this case knows that it is he who in some way or another pays the tax, though why he should be called on to do so is not apparent. A much better plan would be for the master to pay a fair price for his purchases, give higher wages and not expose his servant to the temptation of receiving "unearned increment." We believe the solution of this matter rests with the traders themselves. If they would co-operate and agree to take no unfair advantage of their neighbour we should not hear so much of discounts, bribes, commissions, or "grafts." To say that a gratuity, by whatever name it be called, is of necessity "corrupt," and to enact that it shall cease forthwith is to use vain words. We cannot in every case define where "corruption" comes in. In most instances we must leave that to the consciences of the persons concerned; all we can do is to quicken the conscience both of giver and receiver—especially of the giver, and to plead for such a rate of remuneration as shall render the offer or the receipt of secret discounts, commission, presents, or whatever they may be called, an offence against morality.

RUBBER.—About 50,000 acres in Ceylon are now planted with rubber trees (Hevea). A like area is devoted to the culture in the Malay States. Such is the demand for rubber that our tropical Colonies are vieing with each other as to which shall be foremost in cultivating these valuable trees. At the same time the collection of native rubber from various plants in the Congo and other tropical countries goes on apace. So many are the uses to which rubber is now put that there is no present risk of increasing the profitable supply beyond the demand.

NITROGEN IN RAINFALL.—When we read of the tropical downpours and the luxuriant vegetation which ensues, we have no reason to bemoan our deficiency in nitrogen, for, according to Dr. MILLER, in the *Journal of Agriculture Science*, the amount of nitrogen in the rainfall at Rothamsted may not only be proportionately, but even absolutely, greater at the Hertfordshire station than in British Guiana. A heavy rainfall therefore does not always coincide with a large proportion of nitrogen.

BOTANICAL TRAVELLERS.—We learn that Prof. BOULGER is about to visit the Hevea rubber forests of Peru, in order to report on the commercial prospects of certain districts in the Amazon basin. Mr. E. H. WILSON is also about to proceed once more to China with a view to collect and introduce new plants. Mr. WILSON, on this occasion, goes out under the auspices of Prof. SARGENT. The most cordial good wishes of all interested in horticulture and economic botany will attend the travellers.

SLUGS.—A writer quoted in the *Journal de la Société Nationale d'Horticulture de France* speaks in the highest terms of the use of sulphate of iron as a means of destroying slugs. The quantity used was 300 kilos (660lb.) to the hectare (2½ acres approx.). The remedy is simple, not costly and "sovereign."

ECONOMIC ENTOMOLOGY.—President GARMAN'S address to the Association of Economic Entomologists is published by the United States Department of Agriculture. It has so much in common with the subject of general education, scientific method, and practical cultural work, that we may commend it to the attention of all our readers interested in such matters. The crowded state of our columns forbids us from making extracts, but we may recommend those concerned in teaching science to procure the "Proceedings" from the United States Department of Agriculture at Washington.

Publications Received.—*Proceedings of the Agri-Horticultural Society of Madras.* April to June 1906. This contains a description and illustration of a curious instance of syncarpy in a Pineapple, six fruits having grown together into a mass weighing about 12 lbs.—*Reports on the Botanic Station, &c., Dominica*, 1905-6. Mr. W. R. Buttenshaw reports a large increase in the number of plants distributed and useful work with economic plants carried on by Mr. J. Jones.—*A Selection of Flowering Climbers.* By J. F. Bailey, Director of the Botanic Gardens, Brisbane. This little pamphlet should prove very handy for reference. It consists of a paper read before the Horticultural Society of Queensland last August.—*Annual Report of the Queensland Acclimatisation Society*, for year ended 31st March, 1906. Some important new property has been acquired by the society, and the overseer, Mr. Jas. Mitchell, furnishes a very satisfactory report.—From the West Virginia University Agricultural Experiment Station, Morgantown.—*The Ripe Rot or Mummy Disease of Guavas.* By John L. Sheldon. An illustrated report of a fungoid disease that corresponds to the "anthracnoses" of a number of fruits and vegetables.—U. S. Department of Agriculture. Bureau of Plant Industry, Bulletin No. 92. *Date Varieties and Date Culture in Tunis*, by Thomas H. Kearney.—Farmers' Bulletin, No. 257. *Soil Fertility*, by Milton Whitney.

THE PAMPAS GRASS.

The clump of Pampas Grass Cortaderia (Gynerium) argentea, shown at fig. 119, is growing in the nursery of Mr. William Goff, Littlehampton, who obligingly forwarded us the photograph. Mr. Goff states that the plant is six years old, and is carrying 135 plumes. The Pampas Grass is quite hardy in the South of England, and is seen to its best advantage on a lawn, or by the side of a lake or stream. April is the best month for its planting, and it is easily propagated by division of its roots. The plant is a native of Monte Video, and it will succeed in any rich soil, especially if planted on a warm situation facing south. In colder situations it can be grown with a certain degree of success, providing it receives the protection of a garden mat in winter.

TRADE MEMORANDA.

MESSRS. JAMES VEITCH & SONS, LTD.

We are requested to state that the illness of Mr. James H. Veitch necessitates his relinquishing active work. Mr. Harry J. Veitch, who was for many years at the head of the firm and who withdrew some years since, has in consequence returned and resumed the position of managing director.

BANKRUPTCY STATISTICS RELATING TO GARDENERS.

In a comparative table attached to the report of the Inspector-General in Bankruptcy, we find that during the five years from 1901 to 1905 the number of failures among gardeners, florists, and nurserymen, with the aggregate amount of liabilities was as follows: In 1901 there were 37 failures, including receiving orders and deeds of arrangement, with liabilities amounting in the aggregate to £34,882; in 1902 there were 40 failures with liabilities amounting to £63,273; in 1903 there were 49 failures with liabilities amounting to £33,603; in 1904 there were 49 failures with liabilities amounting to £29,104; and in 1905 there were 31 failures with liabilities amounting to £27,065.

HOME CORRESPONDENCE.

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

Apple James Grieve.—On p. 249 Mr. E. Molyneux appears rather dubious about planting this Apple as a dessert variety for market purposes. I send herewith four specimens of Apple James Grieve pulled 10 days ago, also two fruits of King of the Pippins pulled three days ago from standard trees growing alongside each other, planted in the spring of 1901. I have also several trees planted against a south wall, the fruits from which are a fortnight earlier. I have no hesitation in recommending James Grieve as a good Apple for market purposes, owing to its setting freely and cropping heavily. The difference between the size of the fruits sent is remarkable, but size is not the only recommendation, for colour, shape, and keeping qualities, as well as flavour, are all in favour of James Grieve. *James N. Scarlett, Edinburgh, October 8.* [The variety James Grieve is a first-class Apple in every respect, and well suited to northern gardens. The examples of King of the Pippins, as sent by our correspondent, were inferior, and quite out of character, as we know them in the south; in fact, we have doubts as to their being correctly named.—Ed.]

Apple Judging at the Fruit Show.—Kindly permit me to supply an omission in your otherwise excellent report of the recent fruit show, no mention being made of that most interesting class in the dessert Apple section "any other variety." As this class was by itself on a separate table, the most vigilant reporter might be excused from overlooking it. There were many dishes, and though not all distinct, there were many varieties. All the best were tasted by the judges, and a remarkable result so far as relates to the reputation of that veteran and esteemed raiser, Charles Ross, followed. As last year, his namesake, Charles Ross, medium-sized fruits shown by himself, was put first. A handsome variety of his raising also, named Rival, came second. Mabbott's Pearmain was third, and then another of Mr. Ross's seedlings, Paroquet, was fourth. That is, I think, quite another version of what is known as the "hat trick." Certainly it has, I believe, never occurred to any one raiser before. For the sake of consistency, I am glad to learn that the restriction as to size, viz., the passage through a 3-inch ring, imposed upon Blenheim Pippin in the dessert class, is not to be repeated. I am glad so far, not that I do not think the smaller size amply large enough for dessert purposes, but because it was absurd to note this restriction in one case, then a little farther on to find Allington Pippins placed first in their class, although 4 inches in diameter. Even in the Blenheim class one fruit in the 2nd prize dish measured 3¼ inches across. But this want of consistency as to what is the proper or desirable size in dessert fruits ran through all the classes and the judging. Is it not possible to obtain even from diverse sets of judges something like unanimity as to what should be regarded as essential dessert size? I greatly fear modelling fruits in wax is not yet a perfect art. Could the Council but determine on what is the ideal size and shape for dessert purposes of any one variety, have the selected samples modelled in wax, and place them at the disposal of the judges dealing with the varieties as a model, we should then secure some consistent judging. At present there is no consistency. How greatly the judges wished, in dealing with classes in which, being universally grown varieties, the entries were numerous, that the Council would have entrusted them with a few extra prizes. Merely two prizes in a class with from 30 to 40 entries are inadequate—there should be six at least. May I suggest to judges of single dish classes in future always to collect to the front the few very best "dishes," so as to have them for comparison side by side. That practice will help them to a right decision; it helps the Press, and also the public. In one class, which I want to specially indicate, the most perfect dish was overlooked simply because this precaution was not taken. One other circumstance I should like to comment upon is in relation to the prominence given to red or partly red fruits in the classes for cooking Apples over size and, generally, form, and keeping excellence. What merit has colour in cooking Apples? Even if having a more attractive appearance could that

Fig. 119.—Cortaderia argentea growing in the nursery of Mr. Wm. Goff, Littlehampton.

probably does weigh with many—is a fine sample, possibly a very perfect sample, lacking colour, to take an inferior position to a less fine sample having colour? That is a rather important point, and calls for some authoritative opinion. In all possible cases judging on precisely similar lines throughout is most desirable. *D.*

Impatiens Holstii (as a bedding plant).—I have grown this plant in pots, and also out-of-doors, and I have come to the conclusion that it will make a first-rate bedding subject. Its bright scarlet-coloured flowers, set in a suitable groundwork of some other plants, will furnish a pleasing change. It is of dwarf habit and of sturdy growth, and remains in flower for a very considerable time. Plants raised from seeds sown in heat, early in March, and grown like Petunias, will furnish good material by the end of May. If many plants are desired, several packets of seeds must be obtained. *A. J. Long, Wyfold.*

An Apple Census.—I agree with Mr. A. Dean that a census of bush-tree Apples would be interesting, but upon what lines it should be carried out he does not fully describe. Shall the lists be made with a view to giving the best selection for profit or for home consumption? Upon this depends the way in which the lists should be compiled. For market supply, appearance, rich colour, with freedom in cropping and fair size, are the important points a variety should possess. Flavour is purely a secondary consideration, or hardly that. I submitted highly-coloured fruits of Mère de Ménage recently to a large fruiterer who was in search of dessert Apples. He tasted them and pronounced them not bad! He said many persons do not like sweet Apples, and that hard, crisp fruits are required as well as the soft, sweet ones, especially as some have to be sent to the Cape. Again, locality, soil, and various other considerations have to be taken into consideration. In some gardens where the soil is sandy loam, Ecklinville is quite one of the best of early culinary Apples, but for market it is quite useless. In cold, heavy soils the fruit has a strong tendency to "spot," and in this garden it is utterly worthless. At one time we had 250 trees, now we have two only. Lord Suffield affords another example of variation. Here it almost refuses to grow, but in some gardens it is the best Apple. Golden Spire, although an excellent Apple for small gardens on account of its form of growth, is not large enough for the market. Therefore any list would be the subject of criticism. Miller's Seedling would not be named in many lists, because it is not widely known. Cockle Pippin, Lord Burghley, and Sturmer Pippin are all of moderate quality. Lord Burghley is exceptionally poor in flavour, and what has Sturmer Pippin to recommend it beyond its keeping quality? King of Tompkins County is a distinctly high-flavoured sort in March. Waltham Abbey Seedling, although a good Apple, is much too shy in bearing. Norfolk Beauty will eventually take a high position among cooking Apples in large and small gardens, as it bears freely on small or large trees. It will eventually oust Warner's King from favour, except under peculiar circumstances of exhibition. Good dessert Apples are very scarce at several periods from August to April. *E. Molyneux, Hampshire.*

Codiaeums (Crotons) at Brent Hill Nursery, Hanwell.—I am enclosing four photographs of these plants that were grown from cuttings inserted in January and potted, when rooted, into large 60's, after standing out of the propagating pit for a few days. When they were nicely rooted through these pots, they were given a shift into 32's. As a potting medium I use the following mixture: equal parts loam and peat, one shovelful of silver sand, and one 48 pot of Clay's Fertiliser to each barrowload of the compost. The soil is well rammed when potting. The plants are allowed plenty of room and are stood on inverted pots. They are syringed overhead three times a day in hot weather, and whenever possible the hose is used once a day, for it keeps the plants free from red spider. A little shading is provided while the plants are actively growing, but this is removed by the middle of August. The temperature of the house in which they are grown ranges from 70° to 90°. *R. Ferguson.* [The photographs, which we do not reproduce, showed some good specimens of these decorative foliage plants.—Ed.]

Federation of Horticultural Mutual Improvement Associations.—If these societies are composed entirely of professional gardeners by all means let them federate, assisting each other as far as possible, and educating all their members (especially the younger ones) up to a higher standard of efficiency. But is it not a fact that many of these societies are largely composed of amateurs? I have been informed that such is the case with some of them at any rate, and if this is true they have fallen from their first estate. I was a member for several years of the Maidstone Association, which was, I believe, the first of such societies, or certainly one of the first. This was confined to professional gardeners, and rightly so (I refer to the period 1870-1880), and it certainly was the means of assisting many gardeners to obtain information regarding their profession. But if amateurs and all persons are admitted I would ask professional gardeners to consider the harm they are likely to do to their brother gardeners by encouraging these societies. We are overcrowded now with men, many of whom are not worthy of the name of gardener, and who ought to be debarred from using it. Wages are constantly falling in regard to head positions, one reason of which is the large number of candidates who apply for vacancies. What may we expect will be the state of affairs in another ten years' time, if everyone is to be indiscrimmately taken in hand, and lectured on the general qualifications of the professional gardener? Does any other profession act in this suicidal manner? If so, I have never heard of it. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

Rough Plate Glass for Gardens (see p. 281).—Having some years since had considerable experience with a similar material, I would not advise anyone to use it in this country. In order to cultivate plants and fruits to perfection we require the greatest amount of light we can get on dull days, and always from October 1 to March 31. What is done on the Continent is another matter. A large portion of that "Continent" is nearer to the equator than we are, and the conditions therefore cannot be compared to ours in the matter of light. *W. H. Divers, Belvoir Castle Gardens.*

A Big Fungus.—I have found, in Lythe Hill Park, a very large specimen of the Sparassis crispa, measuring 18 inches long, 9 inches deep, 9 inches wide, and weighing 5½ lbs. I have given the specimen to Dr. J. Hutchinson for his collection, and am told that it is the finest specimen he has seen. *J. Thorne, The Gardens, Lythe Hill, Haslemere.*

Cratægus Pyracantha Lelandii.—My large bush of this variety of Cratægus is just now in grand profusion of berry. Birds are very fond of these berries, and are already taking them from plants growing on the upper side of my grounds; but down by the railway, where noisy trains are frequently passing, the berries so far have been left alone. A lady has asked me whether I could tell her which of the two plants, namely, the common C. pyracantha or the variety Lelandii, birds were most fond of. She evidently was of opinion that the species was more immune than its variety. Perhaps some correspondents will kindly give us their opinions. The lady was going to select for planting the variety which is the more immune. Where expense is no great object, some kind of a wattle cage might be constructed with a net thrown over, this would preserve the berries from the ravages of the birds for a considerable time longer. The netted enclosure should be made high enough and wide enough to allow of people to enter and walk all round the clump. When at Batsford in July last Mr. Garrett showed me a large bed of C. pyracantha Lelandii that had been planted high up on the charming Hillside Wild Garden. When these have grown for a few more years they will form not the least attractive feature in that garden, so unique in its construction and planting. *W. Miller, Berkswell, Oct. 8.*

Sports and Species. A perusal of the interesting leading article on "Sports" which appeared in your issue of September 29 induces me to add my support to Prof. De Vries' "Theory of Mutation" on the strength of the evidence adduced by the Ferns which have formed my special study for about thirty years. It is now a good many years since I first maintained that the sports in this tribe of plants in very many cases fulfilled all the conditions of species proper, inasmuch as they, as a rule, were capable of reproducing their special type truly and constantly from their spores, so that all that was necessary for them to become recognised species by botanists was that they should hold their own in the struggle for existence, and be able to spread and multiply. As a rule, however, though found as established plants, often obviously of considerable age, they are usually either solitary specimens, or but few in number, and growing within a limited area. This fact is the more remarkable as under cultivation these spores generally germinate freely, and, as I have said, reproduce the type truly, the exceptions being merely individual plants representing greater or less variation from the parental type, but in my own experience never thoroughly reverting to the normal or presumably grand-parental type. As individuals the age and robust growth of many "finds" demonstrates at any rate their capacity to hold their own among their normal associates and presumable progenitors, and since their spores must be shed and scattered by millions every season, the reason of their general isolation becomes a puzzle not easy to solve. Exceptions, however, occur which point to the possibility of a "sport" or mutational form, assuming the one missing qualification of a true species, viz., the power of spreading. Thus the late Col. A. M. Jones, a most reliable authority, has recorded that a truncate form of Scolopendrium vulgare (S. v. peraferens) was plentiful in a wood near Portishead, and an even more marked instance occurred with one of my own "finds" of Asplenium Adiantum nigrum, of which some hundreds of a curious caudate form cover a stone dyke on Dartmoor so densely as entirely to oust the normal type which prevails at both extremities of the dyke, the centre of which is monopolised for some yards from top to bottom by the spread of the "sport" in question (A. a. nigrum var. caudifolium). The fronds of this form are short and decumbent, lying much flatter on the wall-surface than those of the normal type, and this appears to give them an advantage, probably by smothering the normal seedlings and encouraging the abnormal ones, whose young prostrate fronds would naturally be less handicapped than upright ones. However this may be, the fact remains that in such a "sport" we have all the essentials of a species proper, and had it been discovered unassociated with the normal type, no botanist would have hesitated to give it a distinctive specific name, since it differs quite as much from the normal as many species do from each other. Considering the great number of Fern sports of the constant class which have been found under wild conditions, and the published records of the most reliable character which exist, we are somewhat struck by the absence of more than a brief allusion to them in Prof. De Vries' book, especially as they in themselves afford a mass of evidence tending to support his theory, and, at the same time, controverting to some extent the prevailing idea of the extreme rarity of such mutational forms. It is well within the mark to claim that at least two thousand such are on record, and it must be borne in mind that these are independent of a large number of variants which the connoisseur and finder did not consider worthy of a place in his collection, or even of record, on account of defective symmetry, but which, nevertheless, are botanically and morphologically as interesting as the others, involving as they do a sudden change of structure of a permanent character. Considering, then, the number of such "sports" and their diversity, it would be strange indeed if, in the æons of time during which plant evolution has gone on, that none of these sudden mutations should assert themselves as species proper. In some cases, indeed, the difference between recognised species is such that a small mutation would suffice. Our three Polystichum species are so closely akin that if a bi-pinnate P. Lonchitis (Holly Fern) were found, it could not be discriminated from P. aculeatum, and, in point of fact, on more than one occasion the latter has most mysteriously appeared in presumed pure sowings of P. Lonchitis sports. I myself found a P. aculeatum high up on Ben Lawers among the Holly Ferns there, and strongly suspected it to be a bi-pinnate form of the latter species. Our native Lastreas (Nephrodium) to some extent belong to a similar category. L. dilatata, for instance, has been split up into several species

—uliginosa, spinulosa, and cristata (why so named no one knows, as it bears no trace of cresting), which very moderate mutations would cover; and L. filix mas, as Mr. G. B. Wollaston demonstrated, presents three distinct forms, viz., the accepted L. f. mas, L. pseudo mas, and L. propinqua, all three of which are prevalent in numerous habitats, are easily distinguished from each other and yet well within the scope of a mutation. Instances of this kind might be multiplied, but even these few suffice to confirm in the writer's mind the view that new species not only may, but are very likely to arise by sudden rather than gradational steps, thus solving the difficult question of the required missing links. We cannot get away from the fact that Nature can proceed by "leaps," and, given such "leaps," it would be strange indeed if they did not occasionally produce like results as the gradational steps of mere individual variation, upon which alone so far the evolutionist has relied. *Chas. P. Druery, V.M.H., F.L.S.*

SOCIETIES.

ROYAL HORTICULTURAL.

October 23.—Although the meeting on Tuesday last was held so soon after the fruit exhibition, there was a large display of Orchids, flowering shrubs, Dahlias, Chrysanthemums, fruits, vegetables, and other things.

The Floral Committee recommended 11 Awards of Merit to novelties, and some of the groups before the Committee were extensive and interesting.

Orchids were numerous, and there were 11 groups of these plants shown. A large number of interesting novelties were submitted to the Committee, and three First-Class Certificates, two Awards of Merit, and one Botanical Certificate were awarded.

The Fruit & Vegetable Committee recommended two Awards of Merit to Potatos, and one to a variety of Broccoli.

In the afternoon a paper on "Horticultural Education" was delivered by Mr. F. J. Baker.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. J. T. Bennett-Poë, George Paul, H. B. May, John Green, Chas. E. Shea, C. T. Druery, T. W. Turner, Jas. Walker, Geo. Nicholson, R. W. Wallace, Jas. Douglas, Chas. Jeffries, Geo Gordon, Chas. Dixon, Chas. E. Pearson, H. J. Jones, W. Cuthbertson, W. P. Thomson, E. H. Jenkins, W. J. James, Chas. Blick, Jno. Jennings, R. Hooper Pearson, Jas. Hudson, J. W. Barr, J. F. McLeod, and W. Howe.

Messrs. James Veitch & Sons, King's Road, Chelsea, showed 25 varieties of Nepenthes. As notable as the completeness of the collection, was the remarkable vigour seen in the plants, each of which was in splendid condition. One large plant of N. Morganæ was carrying about 50 pitchers. The comparatively new variety Sir W. T. Thiselton-Dyer is among the biggest and handsomest of all, and this was shown splendidly. N. Mastersiana × and N. sanguinea are both of shades of red, with no spotting, but the pitchers of N. Tiveyi × owe their chief beauty to the dark red spots present. Some of the cups hang down far below the lamina of the leaf as N. formosa. The pitchers of N. Balfouriana × are very large, while in N. excellens × they are short, but broad, and have very large wings. N. ampullaria vittata produces clusters of tiny pitchers at the base of the plant. Messrs. Veitch also exhibited winter-flowering Begonias, Streptocarpus hybrids, and a group of large flowering Japanese Chrysanthemums. (Silver-Gilt Flora Medal.)

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, staged a semi-circular group of Codiæums (Crotons) in the best decorative species and varieties. On an adjacent table Mr. May also displayed some excellent plants of the Begonia Gloire de Lorraine type, and small plants of Veronica Andersoni, with flowers of red, purple, white, and other shades. (Silver Banksian Medal.)

Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, showed over 100 varieties of choice Ferns. The exhibit occupied the whole of one side of a long table. It was very rich in varieties, with tinted and coloured fronds, and of these the more handsome were Adiantum Farleyense, A. macrophyllum albo-striatum, Pteris tricolor, and Lomaria Hermminieri. A group of Platyceriums occupied the centre of the display. A good specimen of the Killarney Fern Trichomanes radicans was noticed. (Silver-Gilt Banksian Medal.)

Mr. H. J. Jones, Ryecroft Nurseries, Lewisham, showed a group of Chrysanthemums of exceptional merit. The flowers were displayed in a very artistic manner. Both at the back and upon the floor was a covering of green material, which was in excellent taste, and added to the effectiveness of the display. Large specimen blooms of Japanese varieties pleasingly staged in tall tripod stands, with graceful grasses and palms interspersed, and at the back tall Bamboos, and rows of large Chrysanthemum flowers in vases at the foreground, completed a very handsome exhibit. Nothing but praise can be accorded the two epergnes of the white Mrs. A. T. Miller. We have space only to mention a few of the other varieties shown, which were of the same high-class culture. Among these we may select Mrs. W. Knox, Mrs. A. H. Lee, Mrs. Codrington (yellow), and Moneymaker (white). (Silver-Gilt Flora Medal.)

Messrs. W. Wells & Co., Merstham, Surrey, showed a very large and beautifully-arranged group of Chrysanthemums. At the back were three large "bays," having a groundwork of the border varieties, and taller plants of the choicest Japanese varieties; the centre and taller "bay" terminated in a raised group, and on either side were smaller groups all arranged in a setting of small flowering kinds and many of the early-flowering single type. The golden Mrs. A. Thompson, a new decorative flower of last season's introduction, was seen to great advantage in this exhibit. (Silver Flora Medal.)

Messrs. H. Cannell & Sons, Swanley, Kent, displayed a very large assortment of Zonal Pelargoniums, a dozen or more varieties of violets, some good Dahlias among which were some of the pretty Anemone flowered type, and Chrysanthemums. October White and Cannell's Yellow are two pleasing varieties of the large single Chrysanthemum; they both have very long ray florets. (Silver-Gilt Banksian Medal.)

Messrs. J. Peed & Sons, West Norwood, London, filled one corner of the Hall with an exhibit of Chrysanthemums, bordered and interspersed with showy Caladiums. (Bronze Flora Medal.)

Mr. W. Godfrey, Exmouth, Devon, staged a selection of Chrysanthemums, including most of the best Japanese varieties now in season, such as Mrs. A. T. Miller, Lady Northcote (a rather flat, white flower of the incurved type), Miss D. Oliver (pale heliotrope), Jessie Godfrey (yellow), Walter Jinks, &c.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, staged a miscellaneous group of greenhouse plants, among which we noticed some well-grown Ficus, Gerberas, nicely flowering, Cassia corymbosa, Tibouchina macrantha, &c. On an adjoining table the same firm displayed Carnations of the winter-flowering type.

Mr. S. Mortimer, Rowledge, Farnham, Surrey, showed some splendid Carnations of such varieties as Flamingo, Floriana, Harlowarden, Enchantress, Lady Bountiful, &c. Some epergnes containing cactus Dahlias made the exhibit additionally attractive. (Silver Banksian Medal.)

Messrs. W. Cuthbush & Son, Highgate Nurseries, London, N., displayed vases of Carnations of popular varieties and several seedlings of merit.

Messrs. Wm. Paul & Son, Waltham Cross, Herts, staged a group of pot Roses. Some of the blooms were very good, considering the lateness of the season, the best being Bridesmaid, Pharisaer, and the beautiful crimson Richmond.

Messrs. G. Stark & Son, Great Ryburgh, Norfolk, showed a variegated-leaved Nasturtium, named Ryburgh Perfection, and vases of Sweet Pea Enchantress, gathered from the open.

Messrs. Cragg, Harrison, & Cragg, Merivale Nurseries, Heston, showed small Cactaceous plants; some were in very tiny pots in miniature greenhouses.

Mr. L. R. Russell, Richmond Nurseries, Richmond, Surrey, exhibited small plants of Aucuba vera that were well furnished with the pretty scarlet berries.

Messrs. Richard Smith & Co., Worcester, showed an interesting collection of dwarf Conifers and miniature ornamental trees and shrubs—Hollies, Ivies, Aucubas, Eleagnus, &c. (Bronze Banksian Medal.)

Lord Aldenham, Aldenham House, Elstree (gr. Mr. E. Beckett), put up a very extensive collection of tinted foliage, sprays of berries, and other ornamental objects from the open. Most of the foliage was in its autumn colouring, and beautiful indeed were the various species of Rhus, such as R. copallina, with handsome compound leaves, R. glabra laciniata, and R. toxicodendron; Maples such as Acer platanoides and A. saccharinum; Cornus alba (very fine), Liquidamber styraciflua, Quercus alba, Ribes americana, &c. The red berries of Sambucus Thunbergiana, Osmanthus ilicifolius in flower, Hippophae (the Sea Buckthorn, weighed down with its scarlet berries), Arbutus Unedo in flower and fruit, the silky achenes of Clematis paniculata and many others equally attractive. These made up a group both interesting and beautiful. (Silver-Gilt Flora Medal.)

Messrs. Barr & Sons, King Street, Covent Garden, London, showed seasonable hardy flowers.

Mr. Frank Brazier, Caterham Hardy Plant Nursery, Caterham, Surrey, showed a very large number of hardy flowers and border Chrysanthemums. (Silver Banksian Medal.)

Hobbies, Ltd., Dereham, Norfolk, showed Pæony-flowered Dahlias in a very artistic manner. Hobbies also displayed a number of the choicer varieties of Cactus Dahlias. (Silver Banksian Medal.)

Awards of Merit.

Begonia elatior ×.—This is one of the semi-tuberous race of winter-flowering Begonias raised from crossing B. socotrana with varieties of the tuberous-rooted section of the genus. In this case the flowers are semi-double, and of rich, rosy-carmine colour. Shown by Messrs. Jas. Veitch & Sons.

Carnation Robert Craig.—A sweet-scented winter-flowering variety, flowers crimson, with much-fringed petals. Shown by Messrs. Hugh Low & Co., Messrs. W. Cuthbush & Sons, and Mr. A. F. Dutton.

C. White Perfection.—A first-class, white, winter-flowering variety, with fringed petals, robust in growth, very erect flowering. Shown by Messrs. Hugh Low & Co. and Mr. A. F. Dutton.

C. St. Louis.—This winter-flowering variety conforms more to the florists' type than does Robert Craig. The flowers, as shown, are less full of petals, but these are of much better form and quality, and are barely toothed in place of the almost ragged fringing seen in the variety mentioned. In colour the flowers of St. Louis are velvety-crimson, and the habit of the plant appears very satisfactory. Shown by Messrs. W. Cuthbush & Sons.

Chrysanthemum Mormon Davi.—A Japanese variety, the flowers being of good size and considerable depth. The shade of yellow is deeper than in the variety Mrs. R. Hooper Pearson, which in other respects it much resembles. Shown by Mr. Norman Davis and Mr. W. J. Godfrey.

C. Dora Godfrey.—A single variety, with buff-yellow flowers, very free in flowering, and of valuable decorative qualities, but, judged as a "single," the flowers contain too many florets. Shown by Mr. W. J. Godfrey.

C. Mrs. A. T. Miller.—This large, white, Japanese variety, with large, globe-like, white flowers, somewhat resembling those of Alice Byron, is already in commerce, and is familiar to many of our readers. Shown by Mr. H. J. Jones and Mr. W. J. Godfrey.

C. Mrs. Norman Davis.—This variety is also a white Japanese, but of a very different type. The flowers are of the largest size, but the florets are narrow, somewhat twisted, and the bloom is very full in the centre. There is just a suspicion of lemon colour. Shown by Mr. Norman Davis.

Nerine flexuosa alba.—This white variety of N. flexuosa is not new, but, being pure white, it is a valuable variety. The flowers so shown were a little over 2 feet high. Shown by Messrs. Baker & Sons.

Nephrolepis cordata tesselata.—A variety of the type in which some of the individual pinnæ have become pinnate, reproducing, as it were, the conduct as seen in the main stem, and giving to the plant a tesselated appearance. Shown by Mr. S. Crickett, South Tottenham.

Vitis armata Veitchi.—This is a highly ornamental vine from the province of Hupeh, Central China. The stems and petioles are thickly beset with prickles. The leaves generally measure about 9½ inches by 7½ inches, and in autumn are rich red or purplish in colour. A full description and illustrations may be found in Mr. James H. Veitch's paper published in the *Journal of the Royal Horticultural Society*, Vol. xxviii. Shown by Messrs. James Veitch & Sons.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, H. Little, J. Colman, R. G. Thwaites, W. Boxall, W. H. White, W. H. Young, G. F. Moore, A. A. McBean, W. Cobb, J. Wilson Potter, H. G. Alexander, H. A. Tracy, N. C. Cookson, W. A. Bilney, F. M. Ogilvie, and F. Peeters (visitor).

Major G. L. Holford, C.I.E, C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), for the fourth time this year staged a very large cleverly-arranged group replete with fine varieties, and for the fourth time secured the Society's Gold Medal. In the centre, with their graceful sprays of yellow flowers, were fine examples of Oncidium varicosum. These were surrounded by fine forms of Cattleya labiata, including a specimen of the pure white variety with three flowers. Other sections were formed of finely-flowered Dendrobium Phalænopsis, a remarkable set of varieties of Cypripedium insigne, one example of C. i. Sanderæ having fourteen flowers, and another of the Harefield Hall variety with seven large blooms; a pretty arrangement of Vanda Kimballiana; a fine show of varieties of Cattleya "Lord Rothschild," with very richly coloured flowers, the disc of the lip in the best form being a rich shade of reddish orange; a clump of Cattleya Mantini; a selection of Vanda cærulea, and a large number of very handsome Cypripediums, the best of which were C. Charlesianum palmatum, C. Draco (Euryades × insigne magnificum), C. Chapmani superbum, a very large flower; C. Fairieanum, Westonbirt variety; fine varieties of C. Leeanum, C. Maudiæ, C. Niobe, Westonbirt variety, C. triumphans magnificum. A batch of Lælio-Cattleya luminosa and others of its class gave fine colour; C. aurea, C. Hardyana, and other showy hybrids were also present, and the whole was excellently well arranged.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White), was awarded a Silver Flora Medal for an interesting group, containing about two dozen plants of the bright carmine-scarlet Habenaria militaris, the finely-grown plants of which were well furnished with prettily marked leaves, each bearing from one to three spikes. The plants, which are reputedly very difficult to keep in good condition, were perfect in every respect. A Cultural Commendation was voted to Mr. W. H. White, the grower. The other part of the group was made up of several white forms of Lælia pumila, L. p. delicatissima being a good white flower with a slight blush tint, and Miltonias.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), received a Silver Flora Medal for a neat group of rare varieties. Among the forms of Cattleya labiata was the fine white C. l. Cooksoniæ, which has a violet-purple lip with a broad white margin, and another pretty form with flowers of a uniform light rose tint. A very large form of Cattleya Portia had flowers resembling C. labiata in shape; Odontoglossum crispum Sir Frederick has good white flowers with many light-brown blotches, and others noted were the nearly white Lælia Perrini leucophæa, Sophro-Cattleya Chamberlainiana, Sophro-Lælia Veitchii, Brassia Lawrenceana longissima, Saccolabium calceolare, the handsome Cypripedium Marjorie (Leeanum × insigne Sylhetense), and other Cypripediums.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), was awarded a Silver-Gilt Flora Medal for a very fine group, in which the white and coloured forms of Lælia pumila were well represented. L. pumila, Gatton Park variety, seems to be a very free grower, and produces its white flowers with peculiar slatey-blue front to the lip satisfactorily. L. p. superba and magnifica are two very large forms of the typical rose-tinted form, and other representatives of the species were good. In the group were a number of the pretty Cattleya Browniæ, raised at Gatton Park; a good selection of Cattleya labiata, Cattleya Bowringiana, C. Mantini, and Cypripediums, Odontoglossums, &c.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), secured a Silver Flora Medal for an effective group, in the centre of which was the very beautiful Cattleya Octave Doin var. Herbert Goodson, which secured a First-Class Certificate and a First Diploma (see Awards). The group contained a good number of hybrid Cypripediums, including the massive C. H. S. Goodson, C. Fairrieanum, C. Maudiæ, C. Insigne Sanderæ, and other yellow varieties; C. i. Harefield Hall, Miltonia spectabilis Moreliana, and other Miltonias; a good selection of Cattleya labiata, various hybrids, &c.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), staged a group of Cypripediums, &c., which included a very fine form of C. Chas. Rickman, good C. insigne, including the yellow forms Ernesti and Miss Corbett; and a few interesting species, including Pleurothallis cardium, P. velaticaulis, P. scapha, &c. (Silver Banksian Medal.)

Messrs. Charlesworth & Co., Heaton, Bradford, had a very handsome group, principally of showy hybrids, which secured for them the well-deserved award of a Silver-Gilt Flora Medal. Among the showiest were forms of Lælio-Cattleya luminosa, L.-C. Issy, and other Lælio-Cattleyas. With them were several Brasso-Cattleyas, with large, rose-tinted flowers; richly-coloured Cattleya Mantini, the beautiful C. Octave Doin, C. Vulcani, C. F. W. Wigan, and other hybrids. There was also a good selection of Cattleya labiata, Miltonia vexillaris Leopoldi, and other Miltonias; Odontoglossum nebulosum, O. Hallio-crispum, &c.

Messrs. Jas. Cypher & Sons, Cheltenham, secured a Silver Flora Medal for an extensive and effectively-arranged group, at one end of which was a batch of Cypripedium Fairrieanum with many flowers. The centre was of graceful sprays of Dendrobium Phalænopsis, in front of which was a fine form of D. formosum giganteum with dark orange disc to the lip. Other noteworthy batches were made up of Vanda cærulea, Cattleya labiata in fine varieties, the true C. Mantini nobilior; a selection of a pretty Lælio-Cattleya with white flowers, with a showy purple front to the lip; a number of fine Cypripediums, including the richly-coloured C. triumphans, Westonbirt variety, C. Chas. Rickman, C. Lathamianum giganteum, C. insigne varieties; some good Cattleya aurea, including C. aurea chrysotoxa, &c.

Messrs. Hugh Low & Co. staged a group in which were forms of Cattleya labiata, including the fine white-petalled C. l. G. G. Whitelegge; C. Mantini, Warscewiczella velata, Odontoglossum grande, Miltonia Binoti, &c. (Silver Banksian Medal.)

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent Cypripedium Troilus, a massive yellowish flower, with white upper half to the dorsal sepal.

The Marquis de Wavrin, Somerghem, Belgium (gr. Mr. de Geest), sent two forms of Cattleya Robert de Wavrin (Schroderæ × Schilleriana), rose-tinted with purplish-rose markings on the lip; and Cattleya Wildemani (velutina × Trianæ alba), with white sepals and petals, and rose-veined lip.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent Miltonia spectabilis Moreliana nigrescens, and Rosefieldiensis, both of fine dark colour; Odontoglossum Urania (crispum × cristatellum), with cream-white flowers blotched with purple-brown; and O. crispum Angel, a very fine and broad-petalled white form, with clusters of brown spots on the segments.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), showed Cattleya Robert de Wavrin (Schroderæ × Schilleriana), with rose-coloured flowers in form nearest to C. Schilleriana; several good Cattleya Iris; Lælio-Cattleya × Ophir, and Brasso-Cattleya Mrs. J. Leemann inversa (see Awards).

Messrs. Heath & Son, Cheltenham, staged a small group of hybrid Cypripediums, Dendrobium Statterianum, Lælio-Cattleya Bletchleyensis, &c.

Messrs. Edgar & Co., Montrose, South Woodford, staged a small group.

J. Forster Alcock, Esq., Northchurch, sent Cypripedium Bingleyense, and its finer variety superbum.

Messrs. Lager & Hurrell, Summit, New Jersey, U.S.A., showed Cattleya Ballantineana.

Mr. J. E. Sadler, Beedon, Newbury, Berks, showed Cypripedium Germaine Opoix var., Gaston Bultil, a large flower of good form.

M. A. A. Peeters, Brussels, sent Cattleya Mantini fastuosa, a large and brightly-coloured flower, C. labiata Peetersii (see Awards), and the superb white-petalled C. Hardyana alba.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent Brasso-Epidendrum Stamfordianum (E. Parkinsonianum × B. glauca), with singular greenish-white flowers.

AWARDS.

First Class Certificate.

Cypripedium Muriel Hollington (niveum × insigne), from Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young). The typical variety to which an Award of Merit was given November 11, 1890. Flowers white, wax-like, with some light-purple markings on the lower halves of the segments.

Cattleya Octave Doin var. Herbert Goodson (Mendeli × Dowiana aurea), from H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day). One of the most beautiful of hybrid Cattleyas. Sepals and broad crimped petals white, delicately mottled with lavender colour. Lip broad and finely crimped, crimson-purple in front, disc orange with reddish lines at the base.

Cattleya labiata, Peeters' variety, from M. A. A. Peeters, Brussels. A very remarkable variety with almost uniformly coloured rich rose-purple flowers, which show some white variegation on the sepals and petals. The original plant was shown by M. Peeters, November 27, 1894, when it received an Award of Merit. The bizarre colour has been attributed to disease in the plant, but the fine cultivation of M. Peeters has conferred healthy vigour on the specimen shown, and consequently finer colour, but with fewer white markings.

Awards of Merit.

Brasso-Cattleya Mrs J. Leemann inversa (B. Digbyana × C. Dowiana aurea), from R. G. Thwaites, Esq. (gr. Mr. Black). The first Brasso-Cattleya, with B. Digbyana as a seed-parent to be shown. The plant seems harder in substance than the Cattleya seed-parent progeny, and the flowers firmer in texture. Sepals and petals sulphur yellow, disc of lip bright yellow, the fringed front prettily marked with rosy lilac, the base bearing dark reddish-purple lines.

Dendrobium Phalænopsis Phyllis Moore, from G. F. Moore, Esq., Chardwar, Bourton-on-the Water (gr. Mr. Page). A very finely formed white flower with a faint pink disc to the lip.

Botanical Certificate.

Pleurothallis velaticaulis, from R. I. Measures, Esq. (gr. Mr. Smith). A free-flowering species growing a foot in height. Flowers in erect spikes pale green.

Diploma Awards.

Cattleya Dowiana.—*1st Diploma:* Cattleya Dowiana aurea Westfield Beauty, from Francis Wellesley, Esq. (gr. Mr. Hopkins). A charming variety with pale yellow sepals and petals, the latter being prettily decorated with rose at the margins. Lip, claret-purple veined with gold to within half an inch of the front.

C. Dowiana hybrids.—*1st Diploma:* Cattleya Octave Doin var. Herbert Goodson, from H. S. Goodson, Esq. (gr. Mr. Day). *2nd Diploma:* Cattleya Mantini superba, from Jeremiah Colman, Esq. (gr. Mr. W. P. Bound).

Lælia pumila.—*1st Diploma:* Lælia pumila superba, from Jeremiah Colman, Esq. *2nd Diploma:* Lælia pumila, Gatton Park variety, from Jeremiah Colman, Esq.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq. (in the chair), and Messrs. S. Mortimer, A. Dean, Geo. Keif, H. Parr, R. Lye, Ed. Beckett, Horace J. Wright,

H. Markham, J. Davis, Jno. Lyne, P. D. Tuckett, J. McIndoe, C. G. A. Nix, and C. Foster.

W. Roupell, Esq., Harvey Lodge, Roupell Park, West Norwood, showed eight varieties of Grapes, almost all of the Frontignan section, grown in unheated structures. The flavour of most of the varieties was very good, being rich, sugary and aromatic. The best in this respect was Primavis Muscat (Frontignan), which was of delicious flavour, but which we were informed was very liable to crack in the berry, and is difficult of cultivation. Ascot Frontignan gave the best results, and is the variety recommended for planting. Silver Frontignan, White Frontignan, Auvergne Frontignan, Black Frontignan, Grizzly Frontignan, Diamant Traube, and Purple Constantine, the wine Grape of the Cape, were other varieties shown. (Silver Banksian Medal.)

Major Wm. Bythway, Watborough, Llanelly (gr. Mr. Walter Williams), showed 100 dishes of Apples in seventy varieties. Taken collectively, the fruit was of excellent quality, and dessert and culinary varieties alike were good, useful produce. The examples of Calville Rouge Précôce were especially fine. (Silver-Gilt Knightian Medal.)

Mr. Henry Whiteley, St. Marychurch, Torquay, showed two dozen dishes of dessert and culinary Apples of well-known varieties. Very large fruits of Allington Pippin were noticed. (Silver Banksian Medal.)

University College Reading (Horticultural Department) (gr. Mr Charles Foster), showed thirty varieties of English and French Carrots, fourteen of Beet, and several baskets of Onions and Potatos. The Carrots were ordinary field produce, and showed nothing remarkable in their culture, but they were exhibited to show the comparative value of the various varieties and stocks. The same remarks apply to the Beet. One of the best Carrots was found to be Sutton's Champion Horn, and this variety did well either forced or grown as a market variety. It had very little "core," and sparse foliage. Rouge Demi longue de Chatenay is, as its name implies, of French origin. It is classed as a horn, or half-long Carrot. It has a big body, and is a marvellous cropper. Longue Rouge Sang, the long, blood-red Carrot, has a very dark coloured exterior. Other good varieties were Long Forcing, Early Nantes, and Veitch's Intermediate Matchless Scarlet. Seeds of more than one nurseryman's stock were sown, and they were found to differ greatly, and this was also seen in the stocks of Beet. The best of this latter vegetable were Cheltenham Green Top, Sutton's Perfection, Pragnell's Exhibition, and Market Favourite. Dobbie's New Purple Beet is a very dark-coloured variety, the flesh being almost black. The best of the Onions were Trebons, A1, Veitch's Main Crop, and Carter's Giant Zittau. (Silver Knightian Medal.)

Mr. W. H. Barber, Culham Court, Henley-on-Thames (gr. Mr. W. Turnham), showed about eighty very large Onions of the variety Selected Ailsa Craig. They represented part of a crop of 600 bulbs, which totalled 1,405lb. in weight. One hundred of the largest bulbs weighed 300lb., the two largest totalling 8lb. (Silver Knightian Medal.)

Awards of Merit.

Potatos Brydon's Crampton and Russet Queen were each given an Award of Merit after trial at Wisley, and after passing a culinary test. They were forwarded by Messrs. Kent & Brydon, Darlington, and Mr. Scarlett, Edinburgh, respectively.

Broccoli Michaelmas White.—We were informed this variety is distinct in habit from the ordinary type of autumn Cauliflowers, having growth more resembling a Broccoli. The "heads" were very large, and somewhat irregular in surface. The curd is very white. Mr. E. Beckett (gr. to Lord Aldenham, Aldenham House, Elstree) exhibited quite a quantity of "heads," and was awarded a Silver Banksian Medal.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

October 11.—Committee present: Messrs. E. Ashworth, R. Ashworth, F. Sander, H. Thorp, A. J. Keeling, E. Rogers, A. Warburton, W. Stevens, Dr. Ritchie, J. Cypher, J. C. Cowan, F. Ashton, C. Parker, J. E. Williamson, and P. Weathers (hon. sec.).

Groups of Orchids were exhibited by W. Thompson, Esq., Stone (gr. Mr. Stevens), and Messrs Cypher & Sons, Cheltenham, for which Silver Medals were awarded.

Bronze Medals were awarded to Walter Laverton, Esq., Nantwich (gr. Mr. Smith), Mr. W. B. Upjohn, and Messrs. A. J. Keeling & Sons. Votes of thanks were given to G. W. Jessop, Esq., Messrs. J. W. Moore, Ltd., and Mr. D. McLeod.

G. W. Jessop, Esq., Leeds, was voted an Award of Merit for Ærides Lawrenceanum, and Messrs. J. Cypher & Sons gained a similar award for Burlingtonia candida var. gigantea. W. Thompson, Esq., received Awards of Merit for Cypripedium × Cybele Walton var.; C. × "Nora," a distinct cross between C. tonsum × C. × Harrisianum; and Odontoglossum × Rolfæ var. leopardinum.

Cultural Certificates were awarded to W. Thompson, Esq., for Odontoglossum crispum var. "Belle," and to A. J. Oakshott, Esq., for some fine specimens of Odontoglossum grande.

ROYAL HORTICULTURAL OF IRELAND

October 24, 25.—This exhibition was held in the large central hall of the Royal Dublin Society's premises, and was favoured by fine weather and a good attendance on the opening day. Close on 2,000 entries, chiefly among the Apple classes, well filled the extensive tabling.

In the nurserymen's class for the best general exhibit of hardy fruits on a table 20 feet by 4 feet, Messrs. Hugh Dickson & Co., Belfast, won the society's Gold Medal, and were closely followed by Messrs. Alex. Dickson & Sons, Newtownards. In the "Cup Class" for 12 vases of Japanese Chrysanthemums premier honours were awarded to John Jameson, Esq., who thus wins the trophy right out. Mr. F. W. Moore's substantial prize for the best exhibit of 18 dishes of Apples on a table 20 feet by 4 feet, decorated with plants and foliage (11 entries), was also won by John Jameson, Esq., Mr. Hennerty and the Earl of Bessborough following in the order named. Irish-grown Apples are remarkable for their high colour, and in the various classes for which the Department of Agriculture and Technical Instruction for Ireland, had contributed liberally to the prize list, the older standard varieties were very conspicuous. For Bramley's Seedling there were 57 entries, 46 for Lane's Prince Albert, 50 for Warner's King, and 48 for Blenheim Pippin, whilst in the class for a collection of culinary Apples, twelve dishes distinct, six fruits of each variety, there were 17 competitors for Messrs. Rivers' prize. The class for a collection of six varieties brought forward 32 exhibitors.

At the time of note-taking, judging was still going on (under difficulties, owing to a crush at the tables), but the well-filled hall and its spacious galleries, on which the fruit-packing exhibits were displayed, formed a *fait ensemble* apparently as pleasing to the public as to the responsible executive. *Erin.*

ENQUIRIES AND REPLIES.

Hot-Water Pipes.—The substance *M. P.* enquired for (see pp. 267-284) is probably "lagging" and not asbestos. I used some of it for covering 6-inch main pipes, several years ago, with great advantage. Unfortunately I cannot remember the name of the firm supplying the material, but I was told it was refuse from wool factories, and if *M. P.* applies to a mill where wool is cleansed and woven he will probably be able to get it. *W. H. Divers, Belvoir Castle Gardens.*

Peach Buds.—See *S. T. D.'s* enquiry on p. 284. If the borders are in first-class condition as described, the soil constituting the borders maintained in a uniformly moist condition all the year through, the foliage of the trees kept free from the attacks of red spider and aphis until it falls off in the autumn, and abundance of fresh air admitted to the trees day and night from the time the crop has been taken until the houses are closed for forcing towards the end of the year, such trees should not, and in my opinion would not, cast their wood buds, providing the after-treatment afforded was suitable to the trees. But if a rather high and dry atmospheric temperature was maintained at the time of starting the trees into growth, the wood buds would probably commence to drop in the manner described by *S. T. D.*, the rising of the sap in the shoots in the meantime causing the one or two buds left at the points to push into growth.—*H. W. W.*

ANSWERS TO CORRESPONDENTS.

Apples Diseased: *L. F., Ashby.* The fruit is affected with Apple scab, due to a fungus named Fusicladium dendriticum. The Pear also is affected by a fungus, probably Monilia fructigena. Both these diseases occur most often when the trees are growing in uncongenial conditions.—*A. S.* The markings are caused by a fungus Monilia fructigena. See answer to *T. M.* in our issue for October 13, p. 267.

Arum: *M. E. F.* Your plants are affected with the soft rot. Give the corms a thorough baking in the sun during the summer, and grow the plants in a maximum of light. Change the soil frequently, and burn any of the diseased leaves and corms. See article on this disease by Dr. Cooke in the *Gardeners' Chronicle* for January 7, 1905, p. 9. Such communications should be addressed to the Editor and not the Publisher.

Carnation: *H. E.* The seedling is worthy of retention. The flower, although not of the best form, judged from a florist's standpoint, possesses a pleasing colour. The calyx being non-splitting is another point in its favour. The fragrance you draw attention to is very faint.

Compensation for Crops and Greenhouses; *L. E. K.* 1. Thanks for your kind expressions. The articles to be given in an early issue will remove much of your difficulty, and if we were to give you a short answer here we might only confuse you. The question turns on date of tenancy, date of building, and certain other conditions. 2. You should try to come to an amicable arrangement with your landlord, but failing this you can have the matter settled by arbitration under the Agricultural Holdings Acts. The procedure is somewhat technical, so that you should consult a solicitor. We are, of course, assuming that your tenancy agreement is silent on these matters, and that the land is cultivated as a market garden only. See this week's article, p. 292.

Cotoneaster Simonii: *C. E. A.* The berries are not poisonous.

Daffodils and English Irises: *Select.* The following varieties of each section are among the best Narcissi for furnishing a supply of cut flowers in an ordinary garden. *Yellow Trumpet*: Emperor, Golden Spur, Obvallaris (The Tenby Daffodil); *Bicolor*: E. T. Cook, Madame Plemp, Victoria; *White Trumpet Daffodils*: Albicans, Madame de Graaf, Mrs. Camm; *Incomparabilis*: Beauty, C. J. Backhouse, Gloria Mundi, Lucifer, Princess Mary, Stella Superba; *Leedsii*: Duchess of Westminster, Katherine Spurrell, Mrs. Langtry; *Barri*: Conspicuus, Dorothy E. Wemyss; *Poeticorum*: Ellen Barr, John Bain; *Englehartii*: Sequin; *Poetaus*: Cassandra, Ornatus, Poetarum. The Irises should include Blanche Fleur (white), Clara Butt (white with faint blue markings), Emperor (violet, flaked with dark purple), L'Innocence (white ground marked with lavender), Mont Blanc, Perle des Jardins (china blue), Prince Mauritz (ruby flaked with black), Rosa Bonheur (crimson and white), Simon (pale lavender), and Triumph (rosy-claret with silvery shading).

Flower Beds on Lawn: *Vasca.* The most effective method would be to dig over the lawn and thoroughly prepare the surface for sowing with lawn-grass seeds. But you may not desire to go to this trouble, in which case the soil of the flower beds should be made quite firm so that it will be perfectly level with the surrounding turf, after being covered with specially selected turves. The chief reason for the sites of such beds remaining visible for some years after being turfed down, is that the soil being freshly worked, and liberally manured, the roots of the grasses are provided with a more suitable medium than that in which those of the surrounding turf are growing. In order to redress matters as far as possible, let the lawn be given a top-dressing with well-rotted manure, and an occasional application of chemical nitrogenous manures.

Greenhouse Plants: *H. H.* Greenhouse plants require a maximum amount of light in winter, and as any excess of light can be regulated by

suitable shading in summer time, the best position for the house is one that is fully exposed to the sunshine. Of all situations you mention, we should prefer the warm slope of a hill facing to the south. The following is a list of nurserymen in Rio de Janeiro, Brazil, but we cannot say if they are exporters of bulbs and plants:— Lourenço Hoyer, Rua de General Polydore, No. 10 (Botafogo); Pereira da Fonseca, 10, Rua dos Invalidos; Carlos Trevassos, 74, Rua Jose Bonifacio S. Domingo.

LISSOCHILUS: *J. R. H.* We do not know Lissochilus Krameri. It may be Lissochilus Krebsii that is intended, and if this be so, a warm greenhouse will suit it well. The Lissochilli require an atmospheric temperature consistent with that of the locality from which they were obtained. West African species require a moist stove-house, but the Cape and Natal species such as L. Krebsii are capable of thriving in a warm conservatory or greenhouse.

NAMES OF FLOWERS AND FRUITS: We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *F. G.* 1, Waltham Beauty; 2, Waltham Abbey Seedling; 3, Tower of Glamis; 5, Prince Albert.—*Water Lane.* Both fruits are of the variety Prince Albert.—*F. L.* 1, Sandringham; 2, Domino; 3, Lord Suffield; 4, Small's Admirable; 5, the fruit was decayed; 6, King of the Pippins.—*G. H.* 1, Beurré Diel; 2, Marie Louise d'Uccle; 3, Winter Nelis; 4, Summer Beurré d'Aremberg.—*J. Staghthorn.* The Apple is The Queen.—*G. Parker.* 1, Cox's Orange Pippin; 2 & 4, Newton Wonder; 3 & 6, Prince Albert; 5, Cheshunt Pippin; 7, Royal Snow; 8, Cox's Orange Pippin; 9, Ecklinville; 10, Worcester Pearmain; 11, Bachelor's Glory; 12, Tower of Glamis; 13, not recognised; 14, we think is a local variety; 15, Sturmer Pippin. You have sent more than the proper number at one time. See the notice at the head of this paragraph. A contribution to the Gardeners' Orphan Fund would be taken in compensation for the cost and time incurred in replying to you.—*C. C.* 1, Gooseberry Apple; 2, probably a local variety; 3, Hanwell Souring; 4, Melon; 5, Wyken Pippin; 6, Beauty of Kent.—*F. G., Caterham.* Fruit of Pyrus japonica and Apple Warner's King.—*B. W. G.* 1, Yorkshire Beauty; 2, Pott's Seedling; 3, Wyken Pippin; 4, Malster; 5, Cellini Pippin; 6, White Nonpareil.—*J. T. L.* 1, Mère de Ménage; 2, Queen Caroline; 3, not recognised.—*Pears.* 1, Marie Louise; 2, Beurré Superfin; 3, Beurré de Capiaumont.—*H. Reynolds.* 1, Local variety; 2, Minshull Crab; 3, Beauty of Hants; 4, Greame's Pippin; 5, Norfolk Beefin; 6, Keswick Codlin.—*Fair Field, Swanley.* 1, Waltham Abbey Seedling; 2, Scarlet Pearmain; 3, Hollandbury; 4, Belle du Bois; 5, Crimson Queen; 6, Court Pendu Plat.—*J. P. S.* Summer Pearmain.—*Fenote.* 1, probably a local variety; 2, White Westling.—*H. Kaboder.* 1, Graham; 2, not recognised; 3, Prum River; Lite.—*E. M. F.* Doyenné Boussoch.—*H. W. S., Hatfield.* 1, Baldwin; 2, Golden Reinette; 3, Dumelow's Seedling (Wellington); 4, Prince Albert.—*A. Clark.* The numbers were detached. Send again and use stamp waste if possible.—*A. Houghton.* 1, Wyken Pippin; 2, The Queen; 3, White Whorle; 4, White Nonpareil; 5, not recognised; 6, Worcester Pearmain.—*J. E. Thom.* 1, Cellini Pippin; 2, not recognised; 3, Alfriston; 4, Minshull Crab.—*R. O.* 1, Yorkshire Beauty; 2, Hollandbury; 3, not recognised; 4, Waltham Abbey Seedling; 5, Fearn's Pippin; 6, Duchess' Favourite.—*Godla.* 1, Cellini Pippin; 2, Ross Nonpareil; 3, Cox's Orange Pippin; 4, Ribston Pippin.—*A. C. J.* 1, Gravenstein; 2, The Queen; 3, Old Nonsuch; 4, not recognised; 5, Bess Pool; 6, Lady's Finger.—*W. G. G.* American Mother.—*J. M. Bott.* Pear Thompson.—*W. Yandell.* Apples: 1, King of Tompkin's County; 2, Tower of Glamis; 3, Lord Lennox; 4, Cox's Orange Pippin; 5, Pears Beurré d'Amanlis; 6, Belle de Brissac.—*Hibernia.* 64, Newton Wonder; 72, Cheshunt Pippin; 73, Winter Queening.—*F. E. S.* 1, Baddow Pippin; 2, Dean's Codlin; 3, Sturmer Pippin; 4, Golden Russett; 5, Baldwin; 6, Scarlet-golden Pippin.—*L. F.* Adam's Pearmain.—*J. S. H.* 1, Bramley's Seedling; 2, Blenheim Pippin; 3, Court Pendu Plat; 4, Lady Henniker; 5, Beurré de Capiaumont; 6, Autumn Bergamot.—*F. T.* 1, Cox's Orange Pippin; 2, White Nonpareil; 3, Baumann's Red Winter Reinette.—*J. H. A.* 1, Small's Admirable; 2, Winter Hawthornden; 3, Domino; 4, Warner's King; 5, Lane's Prince Albert; 6, Alfriston.—*H. Reeder.* 1, Gloucester Quoining; 2, Waltham Abbey Seedling; 3, Norfolk Beefing; 4, Castle Major; 5, Wellington; 6, Dunster Bitter Sweet.—*Correspondent.* Apple packed in a small cardboard box with cotton wool, no letter, Wyken Pippin.—*W. T.* Fertility.

NAMES OF PLANTS: *G. M. S.* Tussilago Farfara (Coltsfoot).—*N. D. P., Hibernia.* 1, Sedum rupestre; 2, Thymus Serpyllum, var. lanuginosus; 3, Sedum album; 4, Saxifraga hypnoides; 5, Sedum hispanicum; 6, S. oppositifolium; 7, Dianthus deltoides; 8, Saxifraga Andrewsii; 9, 10 and 11, Too faded to recognise; 12, Lysimachia vulgaris. You have exceeded the proper number.—*W. J.* 1, Aster Novæ Angliæ var.; 2, A. diffusus, var. horizontalis; 3, A. Novi Belgii "Robert Parker"; 4, A. N. B. densus.—*J. H.* 1, Miltonia candida; 2, M. Bluntii; 3, Oncidium cheirophorum; 4, O. crispum; 5, Pteris hastata; 6, Selaginella lævigata.—*F. M. O.* 1, Masdevallia nidifica; 2, M. triaristella; 3, Stelis micrantha; 4, Pleurothallis obovata.—*J. L., Euston.* 1, Polystichum angulare; 2, Polypodium aureum; 3, Cyrtomium caryotideum; 4, Pteris argyræa.—*A. F.* The light form of Cypripedium Harrisianum called Dautheri.—*R. P.* 1, Adiantum formosum; 2, A. assimile; 3, Pteris tremula; 4, Woodwardia radicans; 5, Cystopteris fragilis; 6, Polypodium vulgare.—*W. J. G.* Phytolacca decandra.—*J. H., Ireland.* 1, Leycesteria formosa; 2, Tamarix gallica; 3, Pinus contorta.—*W. F.* Aster ericoides var. Clio.—*W. H. D.* Acacia longissima.—*F. S.* Polygonum orientale.—*W. C. O.* 1, Hordeum jubatum; 2, Eragrostis elegans; 3, Lagurus ovatus.—*H. A. M.* Tsuga Brunoniana.—*F. F.* 1, Astrantia major; 2, not recognised, send when in flower; 3, Clethra arborea; 4, Solanum sp.—*B. L.* Abies grandis; we have no experience of its value as a timber tree here.

ODONTOGLOSSUM CRISPUM: *R. S.* The specimen you have with 10 flowers is unusually fine, but a much larger number is sometimes produced by plants sending up branched inflorescences.

OFFICIAL STATUS, &c., OF PARK SUPERINTENDENTS: *Surrey.* We agree with the principle that a Parks Superintendent should be the head official in his department, and that he should be solely responsible to a committee and not to another paid official. Until recent years most of the public parks throughout this country were under the control of Town Surveyors and Engineers, and managed by them more or less as part and parcel of the public highways department. At the present time, however, in the more progressive cities and towns the public parks and recreation grounds are managed by a Parks Committee and a distinct department, the head of which is a trained gardener. The idea that because an engineer is clever at drawing plans and laying out roads and footpaths, he is the best person to have charge of the public parks, is wrong. Public bodies are fast realizing that parks are horticultural institutions, and that the truest interests of the community are served when the person responsible for their management is a trained horticulturist. The fact of the head official being a trained gardener does not in the least prevent his being a shrewd business man capable of looking after the financial part of the work, or one ever on the alert in looking after the safety, comfort, and enjoyment of the public. All these are essential qualifications for a successful Parks Superintendent. We will answer your questions as fully as is possible in the limited space at our disposal. 1, The duties of a Parks Committee should consist in safeguarding all public interests, in relation to parks, commons, recreation grounds, and street trees, controlling all expenditure in connection with the upkeep of parks and open spaces, or on the purchase and laying out of new ones. The appointment and discharge of all its officials. All acts on the Parks Committee should be subject to the approval of the Council; 2, The question of the personnel of a Parks Committee for the management of your public parks is a somewhat difficult one for us to deal with at such a distance, as this largely depends on local circumstances. The fact that your full council consists of only nine members, leads us to think that it would be advisable to enlist the services of a few outside ratepayers as an advisory committee who should, however, have no power to vote. The most important qualification for membership should be the business one. As long as a member is in close touch with public opinion, and has a thorough grasp of business detail, it matters but little whether he understands purely gardening matters or not—the Superintendent is the paid expert and should be the authority on gardening; 3, The duties of the Superintendent should consist in the carrying out of the instructions of the Parks Committee, preparing yearly or half-yearly estimates for carrying on the works of his department; he should keep all expenditure under his control. As far as ordinary garden routine is concerned, he should be allowed to exercise his discretion, but it would be exceedingly bad policy on his part to undertake alterations, planting, or laying out fresh ground without first getting the sanction of his Committee; 4, In Glasgow, Edinburgh, Liverpool, Manchester, Cardiff, Leeds, and most of the other up-to-date towns, a trained horticulturist is the head of the Parks Department; 5, It is not usually considered to be one of the functions of a Parks Committee to raise subscriptions for the purchase of Parks and Recreation Grounds. This is done in isolated cases, but such purchases are usually made out of money raised by rates; 6, The salaries of Parks Superintendents who are heads of their departments range from about £200 to, we believe in one case, £550 per annum, usually with free house, coal, and light; 7, When it can be managed, the best method of arranging the apportionment of playing areas, is to get all Clubs to send in their match-fixtures, whether cricket, football, hockey, or other such games at the commencement of each season. By doing this the Superintendent has a good idea of the demand which will be made upon the ground, and can make a fair division of the play-pitches among the various clubs for their matches. The details for carrying out this principle can easily be arranged to meet local customs. We know one or two Parks Departments in this country where this method of allocating pitches (for every match and not for the season) is carried out to the satisfaction of players and park officials alike.

PLUM ROOTS: *A. E. T. R.* The roots have no trace of fungoid disease; their failure results from their growing in an unsuitable medium. When root-pruning the trees add some old potting material or other fresh soil, and encourage the roots to grow nearer the surface. Root-pruning will most probably result in the tree bearing fruits.

TOMATO: *W. J. G.* So far as we can determine the small circular marks are caused by the punctures of some insect, perhaps greenfly. But if a fungus is present they will soon spread, and in that case kindly send us further specimens.

TRANSPLANTATION OF HOLLIES: *L.* Read the article on p. 288, which includes all the information you require.

VINE ROOTS: *W. B.* The roots have perished, but there is no fungus present to account for the trouble, and we suspect the mischief has been caused by the unsatisfactory state of the borders. These should be seen to and thoroughly renovated during the approaching resting season. Afford some fresh, sweet loam, and encourage the roots to grow near the surface of the soil. Above all see that the drainage material is put into a satisfactory condition.

VIOLETS DISEASED: *F. J.* See answer to *F. C. L.*, p. 268.

COMMUNICATIONS RECEIVED.—W. A. D. (thanks for contribution to Gardeners' Orphan Fund)—H. R.—J. W.—H. M. V.—F. B.—J. F. D.—F. W. O.—H. W. M.—A. Berger, La Mortola.—B. L.—H. J. V.—J. W.—Countess of K.—J. B. D., Pretoria.—L. S. S.—B. L.—W. J. Fields, Berlin.—Amos Perry.—W. T. Y. Z.—R. P. B.—H. B.—L. L. R.—J. F. W.—M. C.—R. B.—A. J. J. G.—W. H. E.—H. F.—A. P.—J. M.—F. H. K.—C. P. R.—A. W. H. P.—W. A. T.—Ribes.—G. W.—O. F.—S. A.—J. B.—J. F. D.—W. P.—J. S. H.—A. V.—A. A. P.—W. W. P.—E. M.

For Market and Weather Reports see page x.

Photo by H. J. Wallis

IMPATIENS OLIVERI FLOWERING IN THE ROYAL GARDENS, KEW.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle

No. 1,056.—SATURDAY, November 3, 1906.

CONTENTS.

ILLUSTRATIONS.

THE AMERICAN GOOSEBERRY-MILDEW IN 1906.

A WARNING TO ENGLISH GOOSEBERRY GROWERS.

I HAVE on several occasions* during the past five years, both in this journal and in the *Journal of the Royal Horticultural Society*, pointed out the danger of the introduction of the American Gooseberry-mildew into England which has been threatening Gooseberry growers in this country. It is quite clear that the danger is now imminent, and that unless immediate and resolute measures are taken, Gooseberry plantations in England will be annually subject to a disease which will prove even more ruinous than "big bud" has proved to Black Currant plantations.

The American Gooseberry-mildew (*Sphaerotheca mors-uvae*) is a native of America, and was unknown in Europe until 1900, when it occurred in three gardens in Ireland, to which country it had been imported on diseased Gooseberry bushes. Since then, it has appeared in several countries on the Continent. At the present time the disease is flourishing in Ireland in hundreds of gardens in no fewer than 14 counties. In many cases the Gooseberry crop has been totally destroyed year after year.

So far England is free, but if the present conditions are allowed to continue, it is practically certain that the appearance of the disease in England is merely a matter of time. I have studied closely the history of the outbreaks of the present disease in Europe, and the preventive legislative measures now in force in other countries, and I have been receiving for the past six years detailed reports from a number of correspondents in Ireland. I am convinced that it is necessary, in order to protect English growers of Gooseberries, that the following measures should be taken:

(1) The temporary prohibition of the uncontrolled importation of Gooseberry bushes from Ireland and all foreign countries.

(2) The extirpation of the disease in Ireland. This can only be effected by the authorities carrying out a systematic inspection of nurseries and private gardens in the affected districts, and ordering the destruction (with partial compensation to the owner) of the worst affected bushes, and the spraying of those only slightly affected.

(3) The distribution through England and Scotland of a leaflet fully describing the disease, and pointing out to all growers the dangerous nature of the disease and the necessity of immediately notifying to the authorities any outbreak in the neighbourhood.

No less thorough measures than these can hope to combat the disease successfully, on account of its epidemic and infectious nature. The Irish Board of Agriculture has now begun to warn growers of the dangerous nature of the disease, and has issued a leaflet describing the disease and recommending fungicides. But until *legislative* measures similar to those now in force against certain infectious diseases of animals are employed against this Gooseberry fungus, the disease will never be stamped out. At the present moment the disease is still existing in Ireland in the very same garden in which it occurred in 1900, and since 1900 not a single year has passed without the disease being reported from fresh counties in Ireland. I have within the last few weeks received communications from correspondents in Ireland which seem to show that diseased plants are being sent out from Irish nurseries to different parts of Ireland. So long as the disease is widely-spread over Ireland, as it is at present, the gravest danger exists of its being brought by chance or in ignorance or carelessness into England. At any time the offer of a cheap lot of Gooseberry bushes from an Irish nursery may induce an English grower to send for them, and by such a purchase the disease may be introduced into England. If once the disease gains a firm foothold in this country, it is not too much to say that it will never be stamped out.

We can best realise what will be the fate of Gooseberry growing in England—where we are wholly unprepared for resisting this pest and where as yet no assistance is given by the Government for the stamping out of epidemic fungus diseases of plants—by taking a glance at the present state of affairs in two countries on the Continent, viz., Germany and Sweden.

In Germany the disease was first noticed in 1904 in a single locality at Labischin, near Bromberg. Dr. Herter, who was specially appointed to investigate the outbreak, now writes to me from the Institute for Plant Diseases at Bromberg, that the disease has appeared during the present year over all the districts along the rivers Menel, Weichsel, Warthe, and Netze, and also along almost the whole of the Baltic coast.

With respect to the outbreak of the disease in Sweden, Prof. Eriksson has recently published in the *Deutsche Landwirtschaftliche Presse* a detailed account of the present state of affairs. This account is of the greatest interest as showing what we may expect to happen in this country should the disease be introduced, and the Government then attempt to combat it. I give below a translation of Prof. Eriksson's article, and I would ask every Gooseberry grower to give it his most careful attention and consideration.

"THE FIGHT AGAINST THE AMERICAN GOOSEBERRY-MILDEW IN SWEDEN.

[illegible]

"In the summer of 1905 the occurrence of the American Gooseberry-mildew was reported for the first time from two localities in the south of Sweden—Karlshamn (Sandvik) and Falsterbo. As a matter of fact, the fungus had been observed in the first locality in 1901, and in the second in 1904 (or 1903), without anyone having paid special attention to it. The diseased plants in both cases had been obtained from a Danish nursery. All the badly-diseased bushes in both the localities were immediately rooted up and burnt, while those bushes only slightly affected were sprayed thoroughly and repeatedly with sulphide of potassium (30 grammes to 1 litre of water).

"Immediately after the first discovery of the disease, the Royal Agricultural Academy had a leaflet distributed through the country, calling the attention of the public to the new pest, and giving the necessary directions for proceeding against it. In order to prevent more diseased Gooseberry bushes being brought into the country, a Royal Prohibition against the importation of Gooseberry bushes and fresh Gooseberries into Sweden was issued on September 27, 1905. At the same time, the Department of Agriculture sent round an official notice to the Agricultural Societies in all parts of Sweden, requesting every grower (in their several districts) who during the last few years had procured and planted Gooseberry bushes to keep these bushes under close observation, and if the disease was discovered, to carry out instantly and with all precision the directions given for its destruction.

"In 1906, at the beginning of June, a new outbreak of the disease was discovered at a residential suburb (Bjerred) near Lund, and by the middle of July numerous cases of the occurrence of the disease were reported from all parts of the kingdom. The disease is now known to occur in a number of places from Dalecarlia in the north to Scania in the south, both in nurseries and in private gardens. For the most part the disease has been brought into the nurseries with Gooseberry bushes obtained from German nurseries; these bushes had been imported in the year 1904 and in the early part of 1905 before the passing of the Prohibition against the importation of Gooseberry bushes.

"II.—*What has been done to combat the pest in* [illegible]

"On July 14, 1906, an appeal was made in the Stockholm newspapers to residents in the

* *Gardeners' Chronicle*, October 28, 1905, and January 27 and February 3, 1906; *Journal Royal Horticultural Society*, vols. xxv., xxvi., xxvii. and xxix.

neighbourhood to examine their Gooseberry bushes very carefully (especially the standards), and, if the disease was discovered, to take immediate and energetic measures against it. In order that the fight against the pest might be carried on vigorously, the Minister of Agriculture, on July 20th, put aside the sum of 1,000 Swedish crowns (£55 4s. 2d.) for this purpose, and at the same time sent to all the newspapers in Sweden a circular with the title 'A call to arms against the American Gooseberry-mildew!' in which the cause and appearance of the disease, its dangerous nature, &c., were briefly described. Further, a printed list of questions, with a request for answers, was sent to all those persons who had reported the occurrence of the disease. During the next few weeks the officials of the Plant Physiological Experimental Station of the Academy of Agriculture paid visits to different parts of the country, in order to examine nurseries as well as numerous private gardens, and to give directions for combating the pest. Finally, it is to be noted that in consequence of these proceedings, many thousands of diseased Gooseberry bushes were rooted up and burnt. Neighbouring bushes which were still healthy were sprayed as prescribed above.

"3.—*How is the fight to be continued?*

"On August 18 the Swedish Pomological Society held a special meeting at Stockholm to discuss this question, when the author laid before a large assembly for discussion the results of his studies and experiences in the following propositions:—

"(1) Where even only a single diseased bush is discovered, this bush, together with all bushes coming from the same place and planted at the same time, must be immediately rooted up and burnt, great care being taken that the persons who carry out this work do not (by means of their clothes, tools, or so forth) unintentionally carry the disease to bushes in other plantations. Should plantations which are but little diseased be very large, then the following *experimental* measures may be carried out: the mildewed shoots must be immediately cut off as soon as they appear, and burnt; later, in the autumn, the bushes must be completely cut down to the ground, and all the parts which are cut off likewise burnt; then the ground must be heavily limed or sprayed, and, finally, in the following spring the new shoots must be kept under close observation.

(2) As spraying with liver of sulphur solution (30 grammes to 10 litres of water), according to results obtained in Sweden during the last few weeks, is not only liable to injure certain kinds of Gooseberries, so that the leaves, or even the fruit, fall off, but may also be insufficient to stop entirely the development of the fungus, growers cannot at present be recommended to use this spray on those bushes or plantations where the disease has already appeared. As an experiment a weaker solution (20 grammes to 10 litres of water) may be used on perfectly healthy bushes to protect them from the disease.

"(3) As in those districts where the culture of standard Gooseberries is a matter of some importance as, e.g., in the neighbourhood of Stockholm the disease appears to have been imported and distributed chiefly with these plants, we advise that such standards should for the present not be planted, especially as it has now been clearly shown that the fungus flourishes on the 'stocks' of the standards, that is, on *Ribes aureum*. All owners of nurseries should therefore be asked not to import wild 'stocks' of this species of *Ribes*.

"(4) As a similar disease has been observed in some cases also on Currants—especially the Red, but also on the Black and even in one place on the Raspberry, careful attention should be paid to these plants also."

"(5) All owners of nurseries in this country must agree not to offer Gooseberry bushes for sale during this autumn and the whole of next year, and all owners of gardens are advised not to plant during that time new Gooseberry bushes coming from other gardens.

"(6) As it concerns the saving of our most important fruit, a united and permanent cooperation for the attainment of this purpose should take place between the State, the local authorities, owners of nurseries, and private growers. All must suffer some loss. In the first place, the State and the local authorities should contribute generously towards giving compensation for monetary loss incurred by the destruction of diseased bushes.

"(7) The fight against the pest must be continued in 1907 with undiminished energy. If the pest were to be allowed to remain unchecked for a few years, it will no longer be possible to control its ravages.

"After some discussion, the Society at this assembly decided to submit to the Swedish Government the following resolutions:—That a Royal Prohibition should be issued forbidding the transplanting of Gooseberry bushes (or parts of them) to other gardens, as well as any sale of them; that this Prohibition should come into force as soon as possible, at the latest by the 10th of September of the present year; and that the necessary means should be provided by the Government for the partial compensation to the grower for loss occasioned by the rooting up and burning of diseased plants, especially in the cases where nurserymen and dealers are concerned."

One cannot help contrasting the activity manifested by Continental countries, as shown in the above case, in combating this new fungus disease of Gooseberries with the inaction of the authorities of this country. Since its appearance in Ireland in 1900, the disease has steadily increased its area each year, until now it is threatening the whole of the eastern half of Ireland. No systematic attempt has been made to eradicate the pest or prevent the appearance of fresh centres of infection. We are now practically waiting until the disease appears in England, although as I wish particularly to point out here, it will in all probability prove too late then to deal successfully with the disease, on account of its epidemic nature.

If the American Gooseberry-mildew is to be kept out of England, immediate and energetic action is required by the Fruit-Growers' Associations of this country. I shall be glad to receive notice of any meetings to be held for the purpose of discussing the matter, or a copy of any resolution on the subject passed by a society. *E. S. Salmon, F.L.S., Hon. F.R.H.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

* Instances of the Mildew attacking Red Currant have occurred this year in Ireland, and also in Denmark. *E. S. S.*

CULTURAL MEMORANDA.

CYCLAMEN.

These plants are most useful subjects for the decoration of the greenhouse and conservatory during winter and early spring. They can be had in flower in about 14 months from the time the seed is sown. The seed should be sown during September or October in clean, well-drained pans, containing a mixture of good loam, leaf-soil, peat and sand, with some finely broken charcoal added. Pass the soil through a ½-inch mesh sieve, fill the pans to within ¾-inch of the top, and well water the soil before sowing the seeds. Place the seeds quite ½-inch apart, and cover them with finely-sifted soil. Another good plan is to dibble in the seeds at a distance of ½-inch apart and about ¼-inch deep, but care must be taken that they are not planted too deeply. Place the pans on a shelf in an atmospheric temperature of 65° to 70°; cover the pans with glass, and place paper over the glass until the seedlings appear, when the paper can be removed, and the glass also as the plants advance into growth. As soon as the seedlings have made two or three leaves, transfer them to small, 60-sized pots, using as a potting medium two parts of good turfy loam, one of leaf-soil and peat, some charcoal and dried cow-manure, and enough coarse sand to keep the soil open.

The plants should be placed again in the same temperature on a shelf as near to the glass as is possible. As soon as the pots are filled with roots, shift the plants into others 3½ inches in diameter, using the same kind of soil as before. The plants can be kept in this temperature until they have become established in their pots, when they can be taken to a frame or pit, in which a temperature of 55° to 60° is maintained. By the second week in June they should be ready for their final potting into pots 5 to 5½ inches in diameter, using the same kind of soil as before, broken more roughly. When the pots are filled with roots the plants should be watered occasionally with weak manure water made from cow manure or from sheep droppings which have been put in a bag and soaked in a tub of water. On warm nights during July and August the lights of the frame may be removed. Attend carefully to their watering and syringe them overhead during the afternoon, for this will help to keep them free from Aphis. These pests can be kept down by occasional fumigations with XL-All insecticide. Towards the end of September some of the most forward plants may be removed to a light position in an atmospheric temperature of 50° to 55° through the winter months. The great secret of success in the culture of these plants is to allow them a moist atmosphere, give them liberal supplies of water and admit a free circulation of air, with suitable shade in summer-time. Endeavour from the first to keep the plants sturdy, vigorous, and as healthy as is possible. *G. W. Smith, Dunsfield.*

NEW OR NOTEWORTHY PLANTS.

XYLOBIUM BRACHYSTACHYUM, Kränzlin n.sp.*

This plant, without flowers, might be considered by anybody as a Stanhopea, the bulbs and leaves and manner of growth being the same in this plant as in that genus. The flowers, however, in their principal features agree with what botanists call Xylobium, a genus comprising all the Maxillarioid Orchids with stalks bearing more than one flower. The genus Xylobium has had a rather heavy struggle for existence, being

Xylobium brachystachyum, *Kränzlin, n.sp.* Bulbi cepiformes fere globosi supra paulum angustati monophylli rhizomate lignoso 1 cm. crasso insidentes laete virides rudimentis coriosis cataphyllorum dense vestiti, 4 cm. alti 3,5 cm. diam. folia singula e petiolo sulcato oblonga acuta trinervia crasse coriacea nitida, petiolus 7-8 cm. longus, lamina 25 cm. longa 9-10 cm. lata; racemi brevissimi pauciflori vix 2 cm. longi, rhachis et ovaria et flores extus sordide purpurei, bracteæ pro planta magnæ cucullatæ 2 cm. longæ vi expansæ 2, 3 cm. latæ flores semiaquantes. Sepalum dorsale late ovato-oblongum obtusum, lateralia bene majora basi valde dilatata cum pede gynostemii mentum obtusum quadalabastris acutum) formantia leviter falcata obtusa; petala basi obliqua gynostemio affixa antice oblonga acutiuscula quarta parte minora quam sepala, omnia flaveola maculis sordide purpureis onusta, labellum simplex obovato-oblongum acutiusculum leviter panduratum subconvexum medio in disco leviter excavatum v. foveatum vix incrassatum lineis callisque omnino destitutum atropurpureum superficie vernixium nitidum; gynostemii pars antica libera vix alla; rostellum magnum cucullinstar foveam stigmaticam obtegens; anthera obtuse apiculata. Flores maximi generis expansi 3 cm. diam. sepalum dorsale 2 cm. longum basi 1, 2 cm. latum, lateralia 2-5 cm. longa basi 1-5 cm. lata, petala ad 8 cm. longa 8 mm. lata, labellum 2 cm. longum antice ca. 7 mm. latum. —*F. Kränzlin.*

Importavit pusit Wilh. Hennen, Hildesheim. E Brasiliæ meridionalis provincia Sta. Catarina.

formerly united with Maxillaria, then re-established as a separate genus. This new member of the genus by no means settles the question, but makes it still more intricate. Besides the unusually short spike, which scarcely reaches the length of the bulb, and the large Stanhopea-like sheathing bracts, the lip of the comparatively large, dirty purplish flower is not like the Maxillaria type, and has still less resemblance to the lip of other Xylobiums. It offers no peculiar character, being a single oblong organ, without any trace of the crests or calli so common in Maxillarias, Lycastes and Bifrenarias. The lip is a little thickened in the middle, with a very shallow impression in its centre, and only in its dark purple colour and the glossy and varnished surface does it differ essentially from the other parts of the flower. Although the plant is not beautiful, it is of botanical interest, as showing the tendency of a Maxillarioid Orchid to pass gradually into the Stanhopea line, whilst there is no trace of affinity to Bifrenaria—a genus considered mostly to be the next to Xylobium.

The plants were imported from Southern Brazil, viâ St. Catarina (or from the province of this name), by Mr. W. Hennis, of Hildesheim, Germany. I could not recognise it in Dr. Alfr. Cogniaux's just finished great work on the Brazilian Orchids, and after a long examination of all materials, literature, and plants accessible to me, I feel quite sure that the plant has not hitherto been described. Besides these negative results of my researches, I gained a positive and rather surprising one, which I mention here because the plant in question has been known in England for many years. It is the so-called Kochiophyton negrense of Schlechter, recently figured under this name in the *Flora Brasil. Orchidaceæ* (III., t. 110), or by its correct previous name, Acacallis cyanea Lindl. The plant was detected by Spruce at Barra de Rio Negro, Brazil (n. 1780 of his collection), and described and analysed in a thoroughly exhaustive way by Dr. Lindley. The sketch of the analysis was afterwards published by Prof. Reichenbach, in *Beitrage zur Orchidenkunde* (Dresden, 1869, p. 13-14, t. IV.) under the name Aganisia cyanea Rchb. f. Then for a rather long time the plant seemed to be forgotten, until in 1885 it flowered for the first time in Europe, and was figured twice in the *Lindenia* (Vol. I., t. 45, and Vol. III., t. 110—Aganisia tricolor, N. E. Brown). Unfortunately the plants were very weak and died soon after flowering. Lastly, the Royal Botanical Museum at Berlin received a small but highly interesting collection of dried plants from the original habitat of the species, and from this material the text and the drawing in the *Flora Brasiliensis Orchidaceæ* (III. t. 119) was made. The two plates in the *Lindenia* give a very good general idea of the plant, and show the spikes as slightly drooping, as indeed they are, but the details for an instructive critical examination are not supplied. The plate 119 in the third volume of *Orchidaceæ of the Flora Brasiliensis* is exaggerated in nearly every respect. The type-specimen in the Berlin herbarium is much more slender and less compact, and not so free flowering as the plate represents. It shows the flower stalks erect as they were placed by the collector, whilst the stalks being thin and the flowers large they should have been drawn in a drooping position. All the other characters, the wings of the column, the crest or calli of the lip, the colour of the flower, as pointed out in the text, are quite the same in the old Acacallis cyanea of Lindley as in the new Kochiophyton negrense of Schlechter. Therefore, I am quite sure that we have the pleasure of renewing an old acquaintance under a new name. *Fr. Kranzlin.*

DISTYLIUM RACEMOSUM.

THIS curious Japanese shrub is a near ally of the Witch Hazels (Hamameldidaceæ). The flowers have a calyx of five or more linear reddish sepals, no corolla, a variable number of stamens with two-celled anthers, a two-celled ovary with a single ovule in each cell, and surmounted by two styles.

Our illustration is taken from a specimen sent us by Mr. Smith from the home of interesting plants at the Newry nurseries. The shrub is not only botanically curious, but it is ornamental as well, and should therefore find a place in the gardens of all plant-lovers. In the north it would require the shelter of a greenhouse.

FIG. 120.—DISTYLIUM RACEMOSUM, FLOWERING BRANCH NATURAL SIZE, SECTION OF FLOWER MAGNIFIED, AND STELLATE HAIR MUCH ENLARGED.

CASTLE ASHBY.

A RECENT visit to these gardens proved to be of much interest. On entering the grounds one is impressed by the fact that the surrounding landscape is in keeping with the grandeur of the mansion. The terraces near to the residence are extensive, and they command some grand views of the beautiful country. The grounds contain many noble Conifers, judiciously planted in connection with some of the more ornamental forest trees. The flower beds are numerous, and they are planted with subjects that not only harmonise with each other, but also with their surroundings. The various strains of flowers are of the best, and the effect they produce is most beautiful. The hardy flower borders are filled with a choice collection of plants, including some of the more recently introduced perennials, in addition to the best of the older varieties. I have seldom seen Hollyhocks in such robust health. Mr. A. R. Searle, the gardener, attributes their success to liberal treatment. The plant-houses are numerous and of imposing architecture, although, perhaps, not the most suited to plant growing. The plant-structures contain a goodly collection of plants, and their roofs are covered with the choicest of greenhouse climbers. The roof of one house was completely covered with the lovely but somewhat uncertain flowering Rose Fortune's Yellow, which, I was informed, succeeds splendidly here. Plants for the embellishment of the mansion, and also for the production of large quantities of cut flowers are largely grown, numerous pits and frames, in addition to the houses, being used for their raising. Chrysanthemums, both for the production of large blooms and as decorative plants, were numerous, the collection containing many up-to-date varieties, all of which gave promise of a wealth of flowers.

In the fruit houses Grapes, Peaches, Nectarines, and Figs were noticed. Melons are also largely grown and in numerous variety. All the fruit showed excellence in culture. In the hardy fruit quarters the Apple crop was but moderate, the late spring frosts having to a great extent destroyed the crop. A large orchard containing pyramid-trained Apple trees has been renovated. Useless varieties have been cut down and re-grafted with kinds suitable to the locality.

The kitchen garden consists of 6 acres of land, completely surrounded by walls. This provides ample space for a large quantity of wall-trained fruit trees. Good crops of Peaches were noticed on these walls, also some young, healthy Peach and Nectarine trees, which the writer was informed were intended for transferring to the Peach-houses as occasion required. Numerous young trees of Pear, Cherry, Plum and Apricot have been planted. Most of the older trees in the gardens were carrying good crops of fruit. Pyramid, bush and espalier-trained Apple trees of the leading varieties are planted parallel with the main walks of the kitchen garden. Bush-trained trees are also largely grown. Strawberries for forcing are layered at once in their fruiting pots, and to judge from their appearance this method is highly satisfactory.

The quarters devoted to vegetables contained good Peas, Onions, Potatoes, Carrots and Beetroot. Peas, notwithstanding the drought, were of high merit. Other vegetables were very good, and gave evidence of good culture and careful attention to detail.

The grounds of Castle Ashby are, by kind permission of the Marquis of Northampton, open to the public, twice weekly, during the summer months. Mr. A. R. Searle has effected many improvements in these gardens during the four years he has been entrusted with their care. *W. Iggulden.*

PLANT NOTES.

LACHENALIA HYACINTHINA.

IN *Meller's Deutsche Gartner Zeitung* for September 15 last appeared a short descriptive note and illustration of this pretty variety. The blooms are small individually, and they are arranged thickly together on the stalk in a horizontal direction like those of a Hyacinth. The colour is white, striped with pale lilac, and the scent is reminiscent of that of the Hyacinth. As a pot-plant it remains in good flower for one month. According to the management of Lachenalias, they may be made to blossom in winter or spring, if the tubers are placed in pots in early or late autumn. It is always advisable to stand them in a cold frame or pit for some time to permit the roots and leaves to develop fully before putting the plants into warmth to hasten the formation of the blossoms. Great care should be taken in applying water during the early stage of development; whilst in the flowering stage water is required in abundance, and as soon as the foliage begins to turn yellow after flowering has ceased, no moisture should be afforded, the pots being turned on their sides when the ripening is completed in the open air.

OXALIS BRAZILIENSIS.

THOSE who possess a greenhouse, cold pit, or garden frame should obtain, at this season, tubers of this beautiful species of this Oxalis, and put them, an inch or two apart, in a moderately light, sandy compost or ordinary garden mould. The drainage should be ample. By potting a few tubers at intervals of a fortnight during autumn and early winter, blossoms may be obtained throughout the spring months. The flowers appear to the number of six or eight on a stalk, and are of a deep shade of carmine. As soon as the tubers have commenced to grow, the pots should be placed in the fullest sunshine. From the time the foliage is mature, the tubers should be kept dry, the pots being turned on their sides in the open air. *A. M.*

PENTAS CARNEA.

THE rage to-day in the horticultural, as in every other walk of life, is for the new and the bizarre, for the untried, no matter how mediocre. The descriptive critique re Pentas carnea, p. 246, is most opportune. Introduced over 60 years ago, it is surprising that this plant, whose cultural requirements are of the simplest, should be so much neglected by the majority of present-day gardeners. Pentas carnea Quartiniana is an improvement on the type, and is the one most usually grown. Cuttings of the young growths inserted in sandy soil, and placed in a little heat, make roots readily at any time; but, if inserted in the spring, good flowering plants for autumn and winter flowering may be obtained. When rooted they should be hardened off and grown on during the summer in cold frames, removing them to the greenhouse before the cold weather arrives. They are not fastidious as to soil, a light, loamy mixture suiting them perfectly. Six-inch pots are large enough for all ordinary purposes, and good, useful plants may be grown in 4-inch pots, provided attention is given to the watering and feeding of the plants. The plant is of a somewhat straggling habit, and should be pinched occasionally. A few light fumigations will keep down fly, which otherwise is apt to be troublesome.

COLEUS THYRSOIDEUS

is useful for associating with the Pentas in any scheme of floral decoration. The thyrsoid racemes of cobalt blue give a combination at once charming and original. May is sufficiently early to commence the propagation of this plant, it being of rapid growth, and if the plants are grown cool, much more sturdy and compact specimens than are usually seen will be the result. The young flowering shoots may be taken for use as cuttings when the spike is showing. Placed in small pots in gentle heat they will root quickly, and come in useful for house decoration for stands and such-like, where, as often as not, pot space is strictly limited. *Fred W. Jeffery, 30, Stevenson Drive, Glasgow.*

ROCK-GARDENS.

(Continued from page 270.)

ONE can so arrange an out-crop rockery that it could only be described as a collection of stones placed in natural-looking strata, to provide deep fissures, seams, rifts, sheltering canopies of stone, exposed ledges of stone, moraines of grit and shale, sunny cracks and clefts, shady cracks and clefts from which moisture oozes, pockets or dips that invite moisture, and pockets that drain moisture away. The fissures, cracks, seams and rifts vary in width from the thickness of a pencil to the thickness of a man's arm, and such fissures and cracks will appear ugly enough directly the rock garden is finished, and the moraines of grit and shale and projecting ledges of stone will appear to be a result of careless workmanship, but when draped with thriving plants they will present a picture far more enjoyable to the eye than that of bolder masses of stone less suitable for the plant.

Generally, one can plant the out-crop rock garden as it is being built, reserving the rarer plants till it has been established several months; by that time the rockery will have been studied, and the sites found that offer the best conditions for plants which are exacting in their requirements. The surroundings of dwarf trees and shrubs can be more tastefully arranged when the actual building has been finished, it being the easier process to throw the rocks into relief by skilful planting, than by building after planting is done. Use Ericas wherever the wind can blow through them; they delight in and have the best effect in elevated positions.

THE MAKING OF PATHS.

Gravel, shingle and other similar materials would be too reminiscent of the formal parterre. A few flat slabs of natural rock will serve as steps for any incline difficult to negotiate without danger or fatigue, and for the rest similar slabs and the debris collected after the rockery is finished, will serve as road-making material for the rockery pathway. Nothing more than a track is desirable, and if it can describe a circuitous course around the principal boulders, it edges, and, for the matter of that, its whole surface in places, covered with Erinus, Thymus, and other free-growing creeping plants, it will serve its purpose well, and as closely resemble the footways of Alpine scenery as the gardener can make it. One can recommend the out-crop rockery for its simplicity and for the cultural advantages it gives. It may cover a few rods, or it may be made to cover an acre with equal fitness. It associates well with a garden landscape if it is implanted in a setting of shrubs and dwarf trees, and it is the only rock-garden one can design that does not need an open expanse of horizon against which its boulders may be seen. Solid and massive boulders are not really necessary for it, but bold out-crops made up of small rocks pieced together and cemented with living plants only, should form its main features. The essential condition is that the slope shall be neither too steep nor too easy, for in the former case the rock garden becomes a wall garden, and in the latter it becomes, what is worse still, a heap of stones. Water, other than a small pool that can be partially hidden, is not a very desirable feature in connection with out-crop rockeries. *G. B. Wallett.*

(To be continued.)

CABBAGE GROWING ON A WALL.

THE example of wall-gardening shown in fig. 121 is perhaps more curious than attractive. The presence of a healthy plant of some species or other, growing upon or in a wall, is common, but we never remember having before seen a perfectly developed Cabbage in such a curious seed bed. It appears to have made the most of its unusual environment, and was not weakly, or consequently in haste to reproduce itself. The photograph was kindly forwarded by Mr. D. R. McKay, Slains Castle Gardens, Port Erroll, Aberdeenshire, who writes: "I enclose you a photograph of a Cabbage growing in an ordinary brick garden wall. The seed must have got in a small crevice between the bricks where the lime had fallen out. It 'hearted' and had a healthy appearance, although it had no other nourishment than that which it extracted from the bricks and dews. I have examined the crevice, and there is nothing in it except some lime rubble."

FIG. 121.—A CABBAGE GROWING ON A WALL.

There are, of course, many interesting examples of species of plants growing on old walls that one would not expect to find in such situations. One instance that occurs to us is that of a specimen of Pinus sylvestris on the side of a wall in the Botanical Gardens, Edgbaston, Birmingham. We do not know the exact age of this plant, but there is evidence forthcoming that it was growing on the wall as long ago as 1845. Its roots commence at a point on the wall 7 feet 6 inches from the ground level. The circumference of the trunk just out of the wall, as measured by Mr. T. Humphreys, is 1 foot 10 inches, and the circumference of the trunk 6 inches from the wall, 10½ inches. The plant has lost the erect habit characteristic of the Scots Pine. For the first 19 inches the trunk is straight, it then assumes a spreading or pendulous habit extending to a distance of 7 feet (more than double its height) over the border. The tree produces cones freely, but these are of small size. There is a smaller plant growing on the same wall, which, it may be added, has an aspect facing to the south.

VEGETABLES.

ONION CULTURE.

A LONDON daily paper recently announced that the growing of Onions in this country in such quantity as to enable us to compete with the Brittany Onion growers and exporters to be impossible. Leaders of such papers too often regard such non-professional dictums as authoritative, yet everyone who is conversant with British Onion culture will agree that we can and do grow under fully profitable conditions the finest, best-keeping, and generally most serviceable Onions to be found in the world. The introduction of the practice of sowing in the autumn varieties of a hard-keeping nature, such as Ailsa Craig, Excelsior, Main Crop, The Globe, A1, and others, in place of the soft-fleeting, if fine-bulbing, Tripolis and Roccas, has done much to open growers' eyes to the folly of adhering to old Onion-growing traditions. Such varieties as those just named are not only quite hardy, but give in the summer very fine bulbs, whether the plants be left where sown or transplanted. If well ripened, and that is easy at that time of the year, they will keep, if needed, till Christmas. Plants so raised also invariably escape maggot troubles, and commonly mildew. But the primary revolution in Onion culture has come from the method originally adopted to produce plants under glass by making sowings in shallow pans in gentle warmth in mid-winter, and by growing the plants on in ample light and air, well hardening them later, and finally planting them out in deeply-worked and well-enriched soil in the spring. Recently when visiting the gardens at Lockinge, I observed several beds of transplanted Onions, each bed being almost exactly a rod in extent, for each contained six rows of plants set at 15 inches apart, and the rows were 54 feet in length. The crop throughout was indeed a splendid one. There might have been altogether 1,000 bulbs. The ground had been trenched deeply, and well manured, and this deep working and liberal manuring were primarily the secret of the success, for whilst in other parts of the garden ordinary crops had felt the drought severely, on this plot the Onions, sending down roots 24 to 30 inches in length, had found ample moisture and food, with the outcome that the crop was generally a superb one. Mr. Fyfe, at my desire, kindly undertook to weigh three beds of equal area when the bulbs were lifted and cleaned, and he has sent me the result as 4 cwt., 3 cwt. 96 lb., and 3 cwt. 8 lb. Had there been an average rainfall, no doubt the weights would have been greater, but, still, here is an average of nearly 4 cwt. per rod, or the enormous crop of 32 tons per acre. Generally, the bulbs averaged 2 lb. each, and were in every case very hard and finely matured. The bulk were of the famous Ailsa Craig variety. But, taking the above as a sanguine estimate, certainly 5 cwt. per rod is a very reasonable one, and that would give 24 tons per acre, and, at £5 per ton, £120 per acre, certainly a marvellous return, but which, after all, only represents 1d. per bulb, a ridiculously low price. Such bulbs as these seen at Lockinge would find ready purchasers in this country at double that price. At present these cannot be purchased in this country, because Onion growers in a large way will not adopt garden methods of culture. These large bulbs are mild and pleasantly flavoured, and baked, stewed, or otherwise cooked, they form delicious diet. What a private gardener can do so well by the rod, large growers might equally well do by the acre. *A. D.*

SWEET CORN.

THIS is a rare vegetable in England, but in America it is grown largely and is there very much appreciated. I have grown something approaching 700 plants this year, so that a few hints on its culture may be of interest. The seeds were sown at intervals of about four weeks in order to provide a succession. The first sowing was made on March 16, another about the middle of April, and another about the third week of May. The seeds were inserted singly in good, light soil in 3-inch pots, and placed in a warm house. When the seedlings were about 6 to 9 inches high, they were moved to a cooler house, in which Tomatos were planted, and here they obtained plenty of light and air and became robust. As soon as the pots were filled with roots, the plants were re-potted into 6-inch pots, in soil such as one would use for Pelargoniums. As the weather became milder they were gradually hardened off, and the seedlings of the first sowing were planted out on May 26, in a warm border. These began to furnish "cobs" on August 1. The next sowing was planted, in the middle of the vegetable garden, on June 7, and "cobs" from these were ready to cut on August 12 and 20, according to the variety. The last sowing was planted about the middle of June, and the first heads were cut on September 10.

I also sowed a dozen rows in the kitchen garden, much in the same manner as Spinach is sown, save that the seed was placed a little deeper. This sowing was made on April 23, and the first head was fit to cut on September 12, and we are cutting from that sowing now (October 2).

The cultural hints can be summed up in a few words. Plant in lines, allowing 18 inches between the plants and 24 inches between the rows, in well-cultivated garden soil, giving manure waterings if required. Do not allow suckers from the bottom to grow, or the size and quality of the corn will suffer; the sooner the suckers are cut off the better the crop, and the more quickly will it be produced. Two or three cobs are sufficient on each plant. Among the sorts grown, I specially recommend Aristocrat for earliest supply, Early Crosby and Early Giant for main crop, and Early Crosby also for late. These are the best kinds among seven sorts tried. *A. H. Pearl, Moor Park Gardens, Tadmore.*

A POTATO "MUTATION."

BEFORE the Potatos are all lifted and stored, and whilst Potato mutations are still in our minds, it may be well to give an illustration of an abnormal condition, which is not very uncommon, and is every whit as remarkable as the alleged sport of Solanum Commersoni, about which so much has been written. Our illustration, fig. 122, was taken from an inflorescence of "Up-to-Date," growing in Messrs. Sutton's grounds at Reading. To the left are shown normal flowers, to the right flowers which are not only much smaller, but yellow in colour.

FIG. 122.—STAMINODY OF THE PETALS IN "UP-TO-DATE" POTATO.

On examination of these flowers, the petals were found to be partly of the nature of anthers, being not only yellow in colour, but producing pollen. Staminody of the petals is a much less common change than the petaloidy of the stamens, such as occurs in so many so-called double flowers; nevertheless, it does occasionally occur and, as we have said, we have not infrequently met with it in Potatos. The reasons for the change are hard to divine, particularly where, as in this case, the normal and the abnormal flowers occur in the same inflores-

FLORISTS' FLOWERS.

OLD AND NEW VARIETIES OF CANNA.

THE gardener has a great scope in regard to his choice of varieties, and among those are the new ones of M. Crozy and other raisers of these beautiful decorative plants for use in beds and borders. The newer ones are much finer, and the blooms larger than in the older varieties, but they are more apt to suffer from heavy rains and wind during the summer months. It is for that reason that many cultivators prefer the older Cannas, notwithstanding the smaller spikes and individual blooms. The following varieties will be found quite satisfactory for group planting. For beds or groups from 5 to 6 yards in diameter choose Rubin, a plant having dark-brownish red leaves and fiery red blossoms that are of great size, and abundant for the centre. It reaches a height of 1¼ yards. Around the central mass plant Königin Charlotte, a variety with light-green leaves and robust growth. The blooms are large, of deep red colour, and broadly bordered with yellow. A bed of this kind has a fine finished appearance, if it be bordered with the fine, cut-leaved Perilla nankinensis foliis atropurpureis laciniatis. Canna Austria is a variety of strong growth and very large leaves, the height of the plant being 4½ feet. The bloom is of a canary yellow colour, with scarlet stripes. Prince Bismarck has large leaves, having a broad reddish margin. The bloom is bright red, and the petals are turned backwards. The height of the plant is from 3 feet to 3½ feet. The following varieties may likewise be recommended, viz., Kaiser William, G. Bornemann, Stadtrath Heidenreich, and Garteninspektor Stapel. Among Cannas having reddish foliage, Pioneer, President Carnot, Amiral Avellan, and Hof-gartendirektor Græbener are among the best. For occupying single small groups on the lawn, owing to their great height and robust growth, are Heinrich Niepa and Ituha. A top dressing of cow-dung three fingers thick, and frequent applications of liquid manure and clear water during hot, dry weather, are good aids to growth. The top dressing is not nice-looking, but in about three weeks it is hidden under the leaves. Extract from an article by F. Hellmuth in the *Deutsche Gartner Zeitung*, October 13 1906.

KEW NOTES.

AUTUMN ROSES.

THE recent rains, coupled with genial weather, have prolonged the season for Roses. In some instances there are now more flowers on the bushes than there were in July. The variety Georges Nabonnand is decidedly better now, its pale, flesh-coloured flowers, shaded with salmon, are charming. Gruss an Teplitz is carrying more blooms than earlier in the year, and this is also the case with Canoens, which is one of the best bedding Roses. In addition to Hybrid Tea and Tea Roses, which usually furnish a late display, some of the Hybrid Perpetuals have also a goodly sprinkling of flowers. The most free-flowering of this last-named section is the beautiful white Frau Karl Druschki. Closely following this is Clio, a pale, flesh-coloured variety, with very thorny stems. The system of pegging down the long shoots in spring, instead of pruning them hard back, appears to encourage the production of autumn Roses, and both these varieties received this treatment. A bed of the variety Mrs. R. Sharman Crawford is gay with a considerable number of flowers. Other varieties of Roses that have now a fair number of flowers are Mrs. John Laing, Countess of Oxford, Baroness Rothschild, and Captain Hayward.

Among the Hybrid Tea Roses, which always produce the best display of flowers, Caroline Testout is easily best, for from three to four months, with scarcely a break, a bed of this variety has been covered with the salmon-pink tinted flowers. Very good also are Mrs. W. J. Grant, bright rose-pink; La France, and its blush sport, Augustine Guinoisseau; Viscountess Folkestone, creamy white, shaded with flesh colour; Killarney, pale rose-pink; and the distinct Mme. Abel Chatenay, of a pleasing shade of salmon-pink colour, especially beautiful when in the bud stage.

The best of the Tea section are Georges Nabonnand, mentioned earlier in the note; Anna Olivier, flesh-coloured; Mme. Lambard, rose, shaded with salmon; Corallina, deep rose, a vigorous grower, an excellent garden Rose, and very pretty as a bud for buttonholes; Hon. Edith Gifford, white, with the centre shaded flesh colour; and Jean Ducher.

During the long period of dry weather this past summer the plants were kept well supplied with water, or they would have fared badly, as the soil at Kew is very sandy and dry. When the blaze of flowers was over towards the end of July, manure water from the stable yard, and also a sprinkling of artificial manure, were given the plants to encourage new growths. *D. D.*

The Week's Work.

THE HARDY FRUIT GARDEN.

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

Dessert Pears.—Last week I enumerated a few choice varieties of Apples. The following is a list of some of the best dessert Pears:—Beurré Giffard, Clapp's Favourite, Jargonelle, Williams' Bon Chrétien, Marguerite Marillat, Triomphe de Vienne (the two last-named varieties are in season as nearly as possible together in the latter part of September, therefore it will not be necessary to grow both), Beurre Hardy, Comte de Lamy, Emile d'Heyst, Louise Bonne of Jersey, Marie Louise, Charles Ernest, Thompson's, Doyenné du Comice, Glou Morceau, Josephine de Malines, Le Lectier, Nouvelle Fulvie, Winter Nelis, Ne Plus Meuris, Easter Beurré, and Olivier des Serres. To this list may be added for exhibition purposes:—Doyenné Boussoch, Pitmaston Duchess, Marie Benoist, Brockworth Park, Souvenir du Congrès, Duchesse d'Angoulême, Durondeau, Conference, Directeur Hardy, Beurré Alexandre Lucas, Beurre Bachelier, and Beurré Baltet Père. These last-named are all very handsome fruits, but they must be grown well, and be of a good size, in order to have them at their best condition. The varieties enumerated will all succeed as cordon, and many of them as bush and pyramid-trained trees if planted in a sunny situation. Doyenné du Comice should be planted in several situations, so as to obtain a succession of fruits. This Pear will hang for a long time, and the major portion of a crop on a south-east wall in these gardens are still hanging (October 22). The planting of these fruit trees should be proceeded with as fast as is possible. In planting cordon trees, allow a space of 2 feet between each. If a small space of wall is to be planted (say, in the place of a worn-out tree, which has occupied 30 feet run of wall), I certainly advise the using of cordon trees, as they will soon furnish crops of fruits, and soon cover the wall. Cordon trees are very useful for filling up blank spaces on walls. They may be single, double, or gridiron trained, according to the space to be filled. The trees should be planted as soon as they are received from the nursery, or many of the small fibrous roots will perish. If the positions in which they are to be planted are not ready for their reception, "heel" them in carefully in some light soil, and plant permanently as soon as is possible. The operation of planting should be performed carefully. If the ground has been recently trenched, holes should be dug the correct depth, and the soil at the bottom be well rammed, after which a little fresh soil should be sprinkled in the cavity. Place the tree on the solid bottom; carefully spread out the roots, and work the soil between them, filling up the hole gradually and with repeated rammings. The trees will in this manner be planted firmly and their roots will at once begin to lay hold of the soil. Fasten the tree in position to secure it against storms and winds, make the surface ground tidy, and fasten an "Acme" label to the wall or to the tree with a piece of copper wire.

Morello Cherries should not be allowed to hang after this date, as the heavy dews will cause them to decay, but if they are gathered carefully, and stored on a dry, airy shelf, they will keep for a week or two.

Autumn Raspberries.—Gather these when dry, for they will then be in the best condition for sending to table.

THE ORCHID HOUSES.

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

Cataseta, Cycnoches, and Mormodes.—The different species which have passed out of bloom or have finished their growth without flowering should now be placed close up to the roof glass in the cooler end of the East Indian house or Mexican house, where they may be exposed to the sunlight. Everything that is possible should be done to enable them to harden and mature the latest-made pseudo-bulbs. They will only require watering at the roots until their leaves have fallen, when, if the plants have become well matured, no water will be needed for several months to come. To keep these plants in good health for any length of time it is necessary to give them a generous growing treatment, and afterwards a long rest. Some of them are very fine objects when in flower, and all are extremely interesting.

Roof blinds, &c.—The roof blinds may now be dispensed with, and any which are made of tiffany or similar material should be perfectly dried previous to their being stored for the winter. At Burford the lattice-wood blinds are not removed, as on very cold nights they are let down and they assist in keeping a requisite temperature in the house. Blinds that are so constructed as to roll down flat on the glass are especially useful in this respect. The calico or tiffany blinds are not serviceable for use in winter as a protection against cold, for on frosty nights they become frozen so stiff that they cannot be pulled up soon enough in the morning, and even if they are rolled up with frost upon them they soon become rotten and useless. The roof glass of the Dendrobium, Cattleya, Mexican and intermediate houses, which was covered with the flour and water mixture, should now be thoroughly washed, as the maximum amount of sunlight and sun heat will materially assist in hardening the pseudo-bulbs and leaves of the plants, and will also be very helpful to plants which are now forming their new growths, &c. After the shading materials have been removed from houses with a direct southern aspect, the sun's rays may yet prove too powerful for such plants as Phalænopsis, Aerides, Angræcums, Vandas, Bolleas, Phaius, Cypripediums, &c., or to unhealthy plants of other species, which may have been recently repotted. These plants should, therefore, still be protected from strong sunshine, independently of the other inmates of the house. A few sheets of tissue paper will be sufficient protection in most instances. Recently re-potted plants in the Odontoglossum house will also need to be lightly shaded when the sun is bright, and the whitening which has worn thin on the roof glass answers the purpose admirably. At Burford the plants of Phalænopsis Schilleriana, P. amabilis, P. grandiflora, &c., which are in a lean-to house facing the west, are carefully protected from the sun in a similar manner. The nights have now become considerably colder in the south, and at any time, without the least warning, sudden sharp frosts may appear, especially during the early hours of the morning, and when one is the least prepared for it. Persons, therefore, having the heating apparatus under their charge will need to exercise careful judgment in order to maintain proper temperatures in the various houses. Owing to the irregularity of our climate, it is at times very difficult to forecast the fluctuations in the outside atmosphere, and it is preferable, when finishing up the fires for the night, to err a little on the warm side, than to run the risk of having too low temperatures. Some tender Orchids, especially Phalænopsis, may very easily be permanently injured by cold, and particularly when the atmosphere is excessively damp. The night temperatures given in a former Calendar should be maintained for the present, and on cold, frosty mornings the temperatures should be raised by small, quick fires, and should the temperatures of the various divisions fall below the lower figures given, it is not advisable to do any watering or damping down until the requisite degree of heat is reached. If, however, owing to a change from a cold night to an unusually mild morning, the inside temperatures are higher than they should be, a little extra ventilation should be afforded and enough water sprinkled about the paths, &c., to tone down the desiccating atmosphere.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Heating appliances should be thoroughly overhauled for the winter. Examine the boilers and see that they are in good working order. In gardens where a regular system is practised of cleaning the soot boxes and flues each week, there will be little trouble in regulating and maintaining the required temperatures in the various structures, but there is a tendency in some establishments, especially where labour is not too plentiful, to leave the stokehole to care for itself, and then in case of a sudden and severe frost at night, things are quite unready. See that the air taps and the valves are in a working condition, for thereby much anxiety will be averted. A little lamp-black and oil applied to the surface of the pipes when they are warm will give them a clean appearance, and act as a preservative to the iron. (Black surfaces are the best radiators.) The walls of the stokehole should be lime-washed and everything be in perfect order, ere the heavy duties of stoking commence.

Bulbs for early forcing.—The earliest potted bulbs of Roman Hyacinths and Narcissi should now be sufficiently rooted to allow of their removal from the bed of ashes where they have been plunged, into a frame where they can be shaded for a few days until the new growth has hardened and become green. Although the main supply of flowers from bulbous plants is not required until after the bulk of the Chrysanthemums are over, it is necessary to force a few, to supply choice flowers from the end of November and onwards. Although Roman Hyacinths can be readily forced into flower, the best inflorescences are produced by steady forcing; indeed, excessive heat frequently arrests the growth of these plants altogether; while in the case of early Narcissi undue forcing also leads to failure. A temperature of 55° to 58° will generally be found suitable in the early stages of these plants' culture, with an increase of temperature as growth develops.

Fuchsias.—If these plants have been treated as advised in the Calendar for August 11, the pots should now be filled with roots, and the plants will receive benefit from applications of weak liquid manure, for this will induce healthy foliage, and also strengthen the growths.

Richardias.—If these plants are intended for flowering about Christmastide, they should be given a position near to the roof glass in a light, airy house, having a temperature of 55° to 60°. Plants which have been kept in pots during the summer months are more amenable to early flowering than are those which have been recently lifted from trenches. These latter plants may, for the present time, be kept in cold frames or pits, from which frost is excluded. When the soil about them has become filled with their roots, give copious supplies of liquid manure.

Tea Roses in Pots.—All weak shoots, and any others that are not required, should be pruned back to a strong bud. Protect the plants from heavy rains, and do not keep them wet at their roots. They may be removed to the forcing house in the month of December.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Peaches.—The trees that will be forced first should now have the old wood that was overlooked after the trees were cleared of their fruit cut out. The old "snags" should be cut quite away, as they would otherwise appear so unsightly next season. Probably some of the young trees that were planted last season will have made some extra strong growths, and these should be cut back to good wood-buds, in order that next season they may produce fruit-bearing growths. Fruit-bearing wood should not be shortened unless for the purpose of obtaining a better balance in the trees. The woodwork in the house should be washed down with water containing soft soap and paraffin. In some cases the roots may need attention, such as relifting and the cutting back of thick thong-like roots, which will be the means of checking the strong growths and producing fruitfulness. Remove all the old ties, and afterwards paint the trees with a mixture of sulphur, Gishurst compound, and sufficient soot to make it of a dark colour, thoroughly dissolving these ingredients and making the mixture to the consistency of paint. Wash the walls with hot limewash, and apply to the borders a top-dressing of loam, lime, scraps, wood ashes, and soot all mixed thoroughly together. Should any fresh trees be required, they should be planted in their permanent positions as soon as possible. Any good-flavoured varieties in a fruiting condition growing against outside walls, and that were root-pruned last year, will now possess an abundance of fibrous roots, and be in a good condition for removal under glass. Keep the atmosphere of the houses as cool as possible at present, and ventilate it freely until the trees are started into growth. Do not put other plants into these structures if it can be avoided.

Successional trees.—As soon as the leaves have fallen from the trees let the necessary pruning be carried out as described above for the early trees. There should be little pruning necessary at this season, but if the growths are too numerous, do not hesitate to thin them out. The work of cleaning the trees and houses, and of training the shoots on the trellis, may then be proceeded with. If any root pruning has to be done, or renovation of borders to be carried out, such work must be given prompt attention. Apply a thorough good watering to the roots before any are lifted, and make a second application after the work is finished in order to settle the soil amongst the roots. Bone-meal is an excellent fertiliser, and if applied to the roots of old trees at the rate of ½lb. of meal to the square yard, it will greatly assist them.

Young trees.—It is a good practice to have always a few young trees growing on outside walls, to be in readiness for replacing any unsatisfactory trees indoors.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Standards of Weeping Roses.—Whatever we may think of the ordinary Standard Roses, which unfortunately are too often unsuccessful on account of the unsuitability of the varieties used for the purpose, there can be no hesitation about acclaiming the Standard Weeping Rose as being one of the most popular acquisitions in the ornamentation of the garden in recent years. That it is an object of surpassing beauty must be admitted by all who have had the privilege of admiring a well-grown example in the perfection of its bloom. In general effect the whole plant can be likened to a lovely and gigantic shower bouquet lightly and gracefully arranged. To be grown to the best advantage these Weeping Standards should be at least 6 feet in height, and be provided with ample space in which to develop and display themselves. An avenue of them with a bold breadth of turf walk would add a delightful and enjoyable feature to a rosary. Amongst the best Roses adapted for providing Weeping Standards are the Wichuraiana hybrids, particularly Dorothy Perkins, René André, Alberic Barbier, and Paul Transon, whose pendulous habit and pleasing foliage naturally lend themselves to this form of culture.

Arches and Arbours of Roses.—Arches over garden walks, or spanning paths in the pleasure grounds, and arbours to provide shady retreats for garden chairs, if suitably planted with the best of Roses make beautiful and attractive pictures. Particularly well adapted for this kind of work is Crimson Rambler, especially so if the arch is wide and massive. The peculiar depth of crimson of its flowers makes it impossible to share its position with other colours, so it should be given a position to itself. Crimson Rambler should always be grown in the open, exposed to free access of air and light, and should never be cultivated against a wall, in which position it becomes yellow and comparatively sickly in appearance. Dorothy Perkins, with its abundance of lovely soft pink coloured blossoms commencing its display when the freshness of the majority of other Roses is waning, is admirable for arches or trellises. When once established its growths should be well thinned out every autumn to ensure a lightness in its habit at the time of flowering. Lady Gay, of darker, and perhaps less pleasing, shade than Dorothy Perkins, and certainly of more ephemeral duration as regards flowering, is still a very suitable Rose for covering arches. Papillon is a splendid Rose for the purpose, both because of the profuseness of its lovely pink flowers, and for the long period of blooming it enjoys, which lasts until stopped by frost. Psyche is another Rambler well suited for arches. Gruss an Teplitz for smaller arches and bowers would be hard to beat with its brilliantly-coloured blooms produced in large clusters and sweetly fragrant, with foliage, too, of pleasing appearance. The flowers of Gruss an Teplitz last in perfection until late in autumn. In addition to those already mentioned, the following is a small selection of varieties specially suited for the purpose of covering arches and arbours: *Ramblers*—Felicité-Perpetue, The Dawson, Hélène, Leuchstern. *Teas*—E. V. Hermanos, Gloire de Dijon. *Hybrid Teas*—Bardou Job, Longworth Rambler, Reine Olga de Wurtemburg. *Noisettes*—Aimée Vibert, Alister Stella Gray, Madame Alfred Carrière.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Winter Lettuces.—Complete the means for affording protection to Lettuces that are expected to stand in the open garden ready for use as long as possible. Frames may be placed over the plants, or, if it is preferred, they may be lifted and placed closely together in frames. Two of the best varieties of the Cos section for yielding winter supplies are Sutton's Little Gem and Jefferies' Little Queen. They are of small size, possess splendid quality, and have solid, white hearts; such Lettuces heart quicker, are less liable to damping also, and can be planted much closer together than the larger growing varieties. Valuable use can be made of shelves in fruit houses by having a quantity of plants of the Cabbage section of Lettuce potted up and placed upon them. These will "turn in" gradually, and may be shifted from an atmosphere of one temperature to that of another as required. Golden Ball and Commodore Nutt are two of the best of this type for potting, and All the Year Round well maintains its value for frame-culture, and is very hardy. Much air should be admitted to Lettuces on all favourable occasions. Remove any decaying leaves as soon as they are observed.

Spring Cabbage.—There is still time to plant a second breadth of Cabbages to succeed the earlier batch. At this season it is the more imperative to select only the very strongest plants for use in making another plantation. Make good any blanks in the earliest section. Slugs have been unusually busy since the rainfall has increased, and they need to be kept in check.

French Beans have been abundant in cool houses, but from the present time onwards they will require a little warmth, in order that the plants may yield a profitable return for the space they occupy. Beans in pots cannot be expected to continue long in bearing in the dead of winter; frequent sowings are therefore necessary to maintain a good supply. Fill 7 or 8-inch pots nearly full of soil before sowing the seeds, instead of partly filling them, which is a common practice. I strongly advise the use of deep pans or half-pots for the winter months instead of large pots, say, of 9 or 10-inch size. The root-growth is never so strong at this season, and in consequence much damage is often done by over-watering and the soil remaining too long in a soddened state. With the use of deep pans, the water quickly passes away. Suitability of soil is an important factor. A porous compost of loam and manure from an old Mushroom-bed, with a small quantity of wood ashes, will grow Beans well, without the aid of chemical manures.

Young Carrots, which have been raised from seeds sown in July, and are becoming fit for use, should have some dry leaves placed amongst them so that they will be afforded some protection against frost and cold winds. The roots may be expected to grow for some time longer. Few vegetables are more appreciated at this season than these young Carrots. The season of such roots can be extended well into the spring if late sowings of suitable small-growing varieties are protected in frames.

Corn Salad.—Where this useful salading plant is grown, it is well to have some protection at hand to be placed over the crop in the event of severe weather. Young plants may still be planted in frames to succeed those in the open, keeping the atmosphere of such frames moderately close to induce the plants to grow.

EDITORIAL NOTICE.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Nov. 3	Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.
TUESDAY,	Nov. 6	Roy. Hort. Soc. Coms. meet. Ulster Hort. Soc. Chrys. Sh. (2 days). Nat. Amateur Gard. Assoc. meet. Brighton Chrys. Sh. (2 days). Croydon Chrys. Sh. (2 days). West of England Chrys. Sh. at Plymouth (2 days). Bournemouth & Dist. Chrys. Exh. (2 days). Southampton Roy. Hort. Soc. Sh. (2 days).
WEDNESDAY,	Nov. 7	Evesham Chrys. Sh. Nat. Chrys. Soc. Exh. at Crystal Palace (3 days). Putney, Wandsworth & Dist. Chrys. Sh. at Wandsworth (2 days). Cardiff Chrys. Sh. (2 days). Corn Exchange Chrys. Sh., Corn Exchange Tavern, E.C. St. Peter's Chrys. Sh., St. Albans (2 days). Bath Chrys. Sh. (2 days). Newcastle & Dist. Chrys. Exh. (2 days). Stoke Newington & Dist. Chrys. Sh. (2 days).
THURSDAY,	Nov. 8	Torquay Chrys. Sh. Stirling Chrys. Exh. (2 days). Manchester & North of England Orchid Soc. meets.
FRIDAY,	Nov. 9	Exeter Autumn Fl. Sh. Stockport & Dist. Chrys. Exh. (2 days). Eccles, Pendleton & Dist. Chrys. Sh. (2 days).
SATURDAY,	Nov. 10	Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick.—44·4°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, October* 31 (6 P.M.): Max. 52°, Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, November* 1 (10 A.M.): Bar., 29·3; Temp., 53°; *Weather*—Dull.

PROVINCES.—*Wednesday, October* 31 (6 P.M.): Max. 50° St. Albans; Min. 46° Liverpool.

SALES FOR THE ENSUING WEEK.

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

MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

WEDNESDAY—
Azaleas, Roses, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY—
Surplus Nursery Stock, by order of Messrs. B. Malller & Sons, at Bickley Hill Nursery, Bickley, Kent, by Protheroe & Morris, at 12.

Unripe Potato "Seed" Tubers.

In reference to one of the trials conducted by Messrs. Sutton & Sons this season concerning which some remarks were published in these columns on October 13, the following contribution from a correspondent signing himself *A. A. P.* is of great interest:—

"Of the results of the different experiments in Potato culture undertaken by Messrs. Sutton & Sons (see *Gardeners' Chronicle*, pages 75 and 260, current volume) none is of greater interest than that which goes to prove that 'seed' partially matured gives better returns than 'seed' fully matured. It should not be forgotten, however, that they are, after all, only confirmatory of the results of experiments undertaken more than a century ago; constantly observed during the early part of last century; and on which, moreover, practice seems to have been founded in, at least, some parts of the country.

"The experiments were then undertaken with a view to finding a means of preventing, or of checking, the disease of the Potato called 'The Curl,' a disease which, it would seem, was viewed with some anxiety in those days. That this was so is shown by the fact that one of the first steps taken by the Caledonian Horticultural Society, on its foundation in 1809, was to offer a prize for the best dissertation on the subject: 'The most effective means of removing that disease of Potatos known as Curl.' As a result, the Society's gold medal was presented to Mr. Thos. Dickson, nurseryman, of Edinburgh, and his essay has the place of honour in the Society's 'Memoirs,' being the first article in the first volume of that publication. Here Dickson tells us of the results of his experiments carried on during the years 1801, 1802, and 1803, and he acknowledges that they were undertaken with a view to testing a theory propounded some years previously by Baron Hepburn of Smeaton, that 'the curl was probably caused by the tubers used for seed-stock having been allowed to become too ripe the preceding year, and that this practice of over-ripening, being repeated year after year, was the real cause of the disease, the vegetative power in the tubers being thus exhausted.'

"Dickson's experiment took the form of planting trial plots of sets taken from the extreme base, or umbilical end, which is somewhat more sappy, and others from the apex, where the flesh is drier. The results were, uniformly, that 'the plants produced from the wet ends continued healthy, and produced abundant crops, while those produced from the dry ends continued to degenerate.'

"That the value of using 'seed' tubers which have grown in a more northerly part of the country was quite understood in those days is shown by the fact that the writer observes that 'those who cultivate Potatos most successfully in the low and early parts of this country, where the disease chiefly exists, bring a supply of seed-stock from the higher and later parts of the country, for a change, every second year at farthest; . . . (where) the tubers are never so highly ripened as to weaken the vegetative principle in them'; an extract which also serves to show that Dickson recognised the one question in its relationship to the other.

"Thomas Andrew Knight came to the same conclusions by a somewhat different process. Having taken, in 1811, a late crop of Potatos from 'seeds' of an early variety grown in the early part of the same season, he found the produce too watery for the table; but having inferred 'that the organisable matter there contained, being in a less firm and concrete state, would prove more disposable,' and that he 'might therefore expect, in the succeeding season, plants of stronger growth and more smooth and perfect foliage,' he used them for 'seed' in 1812. The results were as he expected. 'The plants presented the appearance of a different variety, and afforded a more abundant crop and larger tubers than' he 'had ever obtained from the same variety.' Moreover, the quality of the produce was perfect (*Trans. H.S.*, vol. II., page 64). Later (page 125) is another letter from Knight, in which he records the results of trials in 1813, serving to prove still further the great benefit accruing from planting watery tubers. One early variety with small tubers 'now produces as large Potatos as I wish to raise for my servants' hall'; and a variety whose tubers had deteriorated to the size of a Cherry was brought to produce tubers of its primary size.

"It may be remarked here that the leaf curl (Macrosporium Solani) is now recognised as a saprophyte (Cooke, in *Journal R.H.S.*, vol. 27, page 817), appearing only on the decayed parts of the plant; so that really the object of the experimenters was to obtain a more robust growth, and therefore prevent the appearance of the conditions of decay which would nourish the fungus.

"From Loudon's *Encyclopædia of Gardening* (1835 edition, page 831) one learns that in Lancashire, in some places, the sets for early crops were prepared from tubers which had grown late the previous year, as advised by Knight; and that in Denbighshire they were prepared from tubers lifted before they were ripe.

"Lastly, M'Intosh in his *The Book of the Garden* (1855, vol. 2, page 206) speaks of 'the well-known fact that fully-matured Potatos, fit for food, are less proper for seed than those that are much less perfectly ripened, and hence the demand for seed Potatos from upland and late localities, where, in fact, the Potato seldom ripens to full perfection.'

"With the knowledge of these records, one wonders why the use of immature 'seed' has not become in these days a matter of general practice; especially as it is a fact that none of the writers in our modern works even mention the practice, dwelling only on the benefits arising from an occasional change of seed-tubers. Further, does it not teach one that to winter the seed-tubers in boxes exposed to a drying circulation of air, as is generally advised, is exactly what should be avoided?

"One is tempted to make another deduction from the results of these experiments. May one not assume that Solanum Maglia from the humid coasts of Southern Chili is in the same relationship to S. tuberosum of its drier inland uplands, as, with us, plants from north country grown (or unripened) 'seed' are to those from south country (or ripe) 'seed'? Sabine (*Trans. H.S.*, vol. 5, page 255), with reference to the plants he had raised from tubers originating from Chili, and which he considered to be unquestionably S. tuberosum (but which are now regarded as S. Maglia) admits of his plants, however, that 'the leaves were compared with specimens of several varieties of the cultivated Potato, which generally were rather of a more rugose and uneven surface above, and with the veins stronger and more conspicuous below, but in other respects there was no difference between them.' Now (as quoted before) Knight expected and found this to be the case in plants from matured tubers, as compared with those from immature. Do Messrs. Sutton's observations bear out Knight's in this respect?"

SUPPLEMENTARY ILLUSTRATION, PACHIRA AQUATICA.*—We are indebted to Mr. F. W. MOORE, of Glasnevin, for flowers of this handsome stove tree. Its leaves are glabrous, and resemble in form those of the Horse Chestnut. The flowers, of which one is shown in our illustration of the real size, have a short cylindric, tubular, truncate calyx, and five very long, linear, whitish petals. The stamens are in numerous bundles, but all combined below into a tube. The pollen-grains observed by Mr. WORTHINGTON SMITH are triangular, with three pores at

* AUBLET, *Plant. Guian.*, ii., t. 291; SCHUMANN in *Flor. Brasil.*, xii., 3, t. 46; GRISEBACH, *Fl. Brit. West Indies* 87—[illegible]

the corners and a slightly granular surface. The tree is a native of Central America, Guiana, and of Brazil, and has been carried thence to the West Indies.

ROYAL HORTICULTURAL SOCIETY.—A meeting of the committees will be held on Tuesday, November 6, in the Society's Hall, Vincent Square, Westminster. A lecture on the "Chinese Flora" will be given by Mr. E. H. WILSON at 3 o'clock.

FRUIT AT THE MANSION HOUSE.—In accord with ancient custom, the LORD MAYOR and LADY MAYORESS entertained at the Mansion House on the 19th ult. the master, wardens, and court of the Fruiterers' Company. The Chief Magistrate was presented by the Fruiterers' Company on the occasion with a magnificent gift of British-grown fruit, consisting of the finest Grapes, Apples, Pears, Pines, Melons, Figs, and Peaches. The fruit was placed in two elegantly-shaped baskets, the handles of which were wreathed in vine and other leaves. Mr. GEORGE BUNYARD, the master of the Fruiterers' Company, as reported in the *City Press*, invited the Lord Mayor to accept the gift, emphasising the fact that all the fruit was British-grown. He thought that that was a fact of which they and the country might well feel proud. The Fruiterers' Company was a small guild, but it was an old one, its first charter having been given in 1606. In bygone times it was the custom of Lord Mayors to demand a sample of all fruit that found its way into the City. That tax led to much controversy, which, however, was entirely removed by a magnanimous-minded Lord Mayor, who decided to accept a gift of fruit from the company each year.

THE GREAT FRUIT SHOW.—It is significant, says a correspondent, that nearly all the reports of this Show begin with the anxious consideration whether it was the equal in bulk of its predecessors. Possibly the epithet "great" is intended to relate to size only; it is doubtfully applicable to the Show in attributes which should be much more important. As a spectacular accumulation, in response to the question how great a heap or how large Apples can be massed upon the available area, it was "great," in the American sense. But is this great pile of great fruits really all that the greatest Horticultural Society on earth has to set before the great British public? Is it great to edification? Briefly, this supreme annual effort ought to be *educational*, and it is not. By a reasoned arrangement of the material, and a sufficiency of succinct printed information, the Show could easily be made self-explanatory, which it is not. It should be more, but it is little else, than a mutual admiration meeting of experts. Turn a would-be grower and an inquiring house-wife loose into this great Show, and I defy them, unless rescued by a personal conductor, to learn even such an initial lesson as what are the best Apples in their several months for table and kitchen. The ticketing of the exhibits is obviously intended only for the exhibitors and for the F.R.H.S., who have had the Schedule (and have probably left it at home). Naked numerals are not illuminative to the uninitiated visitor. In an ocean of single dishes of Apples he comes across a lesser sea of thirty-three, surmounted by the bare label "Class 56." Why should this not say, "Class 56, Cox's Orange Pippin, reputed the best dessert Apple," and so teach him one fact for his orchard and table? Is it prohibitively costly and laborious to add to "Class 53" the elucidation "Allington Pippin, perhaps the best substitute for Cox's Orange on soils unsuitable to the latter"? Only a small proportion of the varieties shown would call for such notes. What the visitor needs is to be enabled to discriminate, and here is a yearly opportunity for the Fruit Committee to indicate and illustrate its selection. There should be no insuperable difficulty about giving an abundant of concise and valuable information on the spot. A small descriptive leaflet might be distributed at the door—the R.H.S. spends large sums in ways much less instructive. And why should not the 3 p.m. lecture on the first day of this Show be always a simple exposition of the Show itself? Ideally, the visitor who pays half-a-crown for admission should come forth better equipped to that value for the war with his gardener or fruiterer. Actually, he is not benefited to the extent of two-and-sixpence by wandering through a dumb wilderness of fruit, however "great."

BRITISH GARDENERS' ASSOCIATION.—Mr. JOHN WEATHERS, hon. sec., writes as follows: "At the last meeting, held on October 23 at the Royal Horticultural Society's Hall, Westminster, the vice-chairman, Mr. R. HOOPER PEARSON, presided. Nine new members were elected, bringing the total up to 952. It was decided that young men over 15 and under 20 years of age could join the Association (forming a junior division) upon payment of 1s. 6d. registration fee, and 1s. annual subscription, provided they have had at least one year's experience in some branch of gardening, and can produce a testimonial from a horticulturist recognised by the Association. Such junior members, however, cannot become fully qualified until they have had at least 5 or 7 years' experience in accordance with rules 25 and 26. It was decided that a delegate should be sent to address the gardeners of Bath on November 26, and that a meeting should be arranged at Richmond, Surrey, in December. Pending information as to cost, a proposal to have the Association legally registered, so as to place it on a firmer basis for the protection of its members, was not adopted. With the object of securing situations for members, it has been decided to issue a printed circular with particulars of each applicant, whose name will be suppressed, but who will be represented by a number. Members wishing to take advantage of this circular should draft an advertisement as to their qualifications, age, &c., and forward it to the Secretary, Talbot Villa, Isleworth, W., with a fee of 1s., which will entitle them to regular publicity until suited.

SMALL HOLDINGS. The Departmental Committee appointed by the President of the Board of Agriculture and Fisheries held sittings on the 24th and 25th ult. The Committee had under their consideration the draft report prepared by the chairman.

G. C. CHURCHILL.—A gentleman well known as a critical student of the European Flora and as a cultivator of rare plants died on the 11th ult., at Clifton, aged 84. With the late JOSIAH GILBERT he did much to bring the Dolomites into public notice. In former years he was an occasional correspondent of this journal, and wrote on the rarer Primroses and other Alpine plants.

CHRYSANTHEMUMS.—The following are the points to be discussed at the forthcoming congress at Caen, November 7-9 inclusive.—The means to be adopted for developing the culture of the Chrysanthemum; the best methods of packing Chrysanthemums in pots or as cut flowers; the sterilisation of composts, apparatus to be employed; the use of Chrysanthemums for decorative purposes; alphabetical nomenclature, rules to be adopted; conveyance of plants to exhibitions; accidents or sports, methods of fixing them; insects and diseases.

NOVELTIES.—Mr. HEINEMANN, of Erfurt, offers Begonia Crown Princess, with large white flowers margined with rosy crimson; Dianthus laciniatus, fringed and spotted vars.; Victoria Cyclamen, white with crimson fringed edges; Myosotis stricta alba, an erect growing white flowered form of M. alpestris; Nicotiana affinis, hybrids of various colours; Endive "Silverheart," pale coloured with much fringed leaves.

FLOWERS IN SEASON.—We are not sure that we are in order in including the Horse Chestnut and the Laburnum under this heading; at any rate we are indebted to the Countess of KINNOULL for a photographic representation of a tree at Dupplin, near Perth, which is as densely covered with bloom as it would be in June. Unfortunately the photograph is not suitable for reproduction. Mr. WILSON, of Dupplin Castle Gardens, remarks that it is not uncommon to see a few blooms on the Laburnum in autumn, but not such a profusion as in this case. The autumn blooms of the Laburnum, we may add, are generally not borne on "spurs," but on the ends of the shoots of the year, as happens with some Pears. Another correspondent, Mr. HOWARD, of Purfleet, Essex, sends us a box full of shoots of Horse Chestnut with young leaves, fully-developed flowers, and even young fruit. Such occurrences may be expected after the hot, dry summer, followed, as it has been, by warm, moist conditions.

SAXIFRAGA FORTUNEI.—Mr. AMOS PERRY, of Winchmore Hill, sends us specimens of this species with long-stalked, radical leaves, fleshy, glabrous, suborbicular, cordate, palmately, 7-lobed, the lobes coarsely and irregularly toothed. The flowers are very numerous, in large, loosely-branched panicles, the individual flowers 1 cent. and upwards across, petals strap-shaped, white, two outer ones often unsymmetrical, much longer than the rest; anthers pink.

SALVIA SPLENDENS IN OCTOBER. This exceedingly bright-flowered Salvia is a deservedly popular plant in glass-houses, and it is also occasionally bedded out in the open air, where in good weather it has a very fine effect. It is, however, somewhat tender, and its flowers are liable to suffer considerable injury from rain and wind. We were the more surprised therefore, when visiting Cobham Hall gardens, Cobham, Surrey, the residence of Mr. COMBE, on October 27, to behold a broad band of this plant in one of the borders in the highest degree of beauty. The plants were excellent specimens, and the inflorescences, 5 or 6 inches long, were as erect and the flowers as perfect and brightly coloured as if growing under glass. The effect was certainly the brightest the writer has ever seen in the open garden so late in the season from any plant. The pleasing shade of blue afforded by Salvia patens growing near by, and the white flowers of Anemone japonica alba around the Salvias were minor evidences of the genial weather. We fear, however, that the heavy rains on Sunday last would seriously damage the Salvia flowers. In one of the vineries at the same place were some plants of Eupatorium petiolare deserving of mention. They were growing in 10-inch pots, were 4 feet in diameter, very freely branched, and so dwarf and spreading that it was a matter of difficulty to discover the pots. Mr. HOXESS, the gardener, stated that they had been raised from cuttings rooted in the spring, and that the shoots had been stopped three times. They were showing their inflorescences abundantly.

FRUITS IN SEASON.—It is not often that the Editor's table can boast of such a dish of fruit as that lately sent by the kindness of Sir THOMAS HANBURY, from La Mortola (Italy). It comprised fruits of the true service tree, Sorbus domestica, which are eaten as Medlars, handsome fruits of the Japanese Diospyros Kaki (see fig. *Gardeners' Chronicle*, January 14, 1893, p. 51), which also require to be bletted, the fruits of Casimiroa edulis, a remarkable Aurantiaceous tree (figured in *Gardeners' Chronicle*, September 30, 1893, p. 393), the pulp of which is palatable, and, lastly, those of the Kei Apple, Aberia Caffra (see *Gardeners' Chronicle*, December 22, 1900, p. 402), very acid at first, but acquiring a rich flavour as they ripen.

KEW PUBLICATIONS.—The acceleration in the publication of the periodicals emanating from Kew is very satisfactory. A new part (Vol iv. part iii.) of the *Flora Capensis* has just been issued, containing the completion of the Ericaceæ by Mr. N. E. BROWN, the Ebenaceæ by Mr. HIERN and various minor orders by different botanists. The *Kew Bulletin* also appears more regularly and is full of interesting information. "Rubber," of course, occupies much attention, and there are articles on Potato curl, a complete list of the cultivated species of Mesembryanthemum, details relating to Scottish gardens, and other matters of interest to gardeners. The obituary notice of C. B. CLARKE will be read with sympathetic interest by all who had the advantage of his acquaintance. A list of the members of the staff of the various Government botanical establishments at home and in the Colonies has also been published recently.

A NEW ALPINE BOTANIC GARDEN.—A correspondent sends us the following note:—"The largest Alpine botanic station in the world, at Samoens, a small town in the 'Vallée du Giffre,' not very far from Chamonix in Savoy, was opened to the public on Sunday, September 2. What was formerly a waterless hill, an arid waste, covered with rocks and a scanty shrubbery vegetation, is now converted into a beautiful garden, some three hectares in extent (7·8 acres) and at an elevation of 2,400 feet above the sea level, with a broad avenue leading up to the top of the hill, waterfalls, a torrent with bridges, grassy slopes, shady bowers, and resting places with garden seats. The ground was bought by Madame Cognacq, a native of Samoens, with the idea of making it into a public park. M. Allemand, the landscape gardener, of Paris and Geneva, who created the Swiss Village at the last Paris Exhibition, the Geneva Botanic Garden, and many other works of gardening art, was chosen as the man most likely to make the best of this wilderness. Instead of making only a park, as the proprietress had at first intended, he divided the whole surface into 25 parts, and made a botanic garden, representing the vegetation of all the great mountainous parts of the whole world. A large part is devoted to the Alps from Nice to Trieste, sub-divided into Alpes maritimes, Dauphiny, Savoy, Switzerland, Piedmont, Lombardy, Tyrol, and 'Alpes orientales'; sub-divisions are alloted to Pyrenees, Apennines Corsica, Sardinia, Vosges, Cévennes, Jura, Carpathians, Balkans, Caucasus, Himalaya, China, Japan, North America, South America, New Zealand, Arctic Regions, Siberia, and the Scandinavian Alps—the latter three at the top of the garden. A large part is also devoted to the granite Alps the rocks were brought from the Valley of Chamonix, and also a few truckloads of granite debris, so as to imitate the natural conditions of the plants. There was great difficulty in finding suitable water for these plants as well as for some delicate North American subjects, as the water in the neighbourhood is of a very chalky nature, so for this purpose rain water is collected at the top of the garden and on the roof of the buildings. Some 50,000 trees, shrubs, and Alpine plants are already planted in their respective distribution, and every one labelled. The water brought from a neighbouring valley to supply the waterfall at a rate of 1,500 litres per second, and the 40 hydrants for watering has a temperature of 5° C. 41° F. summer and winter, and has a very cooling effect in summer. A very pretty picture is that of the little chapel, some 300 years old, which stands about half-way up the slope in the middle of the garden. The ruins of an old feudal castle at the top of the garden, which history traces back to the fifteenth century, have been renovated. From the terrace in front of the castle a magnificent view of the town of Samoens, the 'Vallée du Giffre,' and the surrounding mountains is obtained. There is a difference of 240 feet in height between the entrance and this terrace. A villa for the director and a cottage for the gardener have been built near the gate, which is practically in the town itself. To give some idea of the work that was necessary to bring about a satisfactory result it may be mentioned that 6,000lb. of powder had to be used to remove the rocks, so that the main road, waterfalls, paths, lake, &c., could be constructed, and it has taken nearly three years to complete the work, employing as many as 200 workmen at one time. Samoens is only some 30 miles distant from Geneva, and can be reached in three hours by rail."

FORMOSA.—Professor MATSUMURA and Mr. HAYATA, of the Botanical Institute of the University of Tokyo, have published a complete enumeration of the plants known to be indigenous to the island of Formosa. The work is in Latin and is well got up. It will be indispensable to students of the Flora of South-East China. Eighteen plates and a map add to the utility of the volume.

ABERIA CAFFRA, THE KEI APPLE.—From La Mortola comes the following note:—Aberia caffra Hook. & Harv., or, as it is now called, Doryalis caffra Warb., is a small, evergreen tree or large shrub, of irregular growth, with spreading and spiny branches. The leaves are small, leathery, and shining above, and crowded at the top of the short side shoots along the branches; those of the terminal shoots are larger and broader. The former are very variable in shape and size; they may be described as obovate-lanceolate, narrowed into a petiole, and obtuse or even retuse at the top. They measure about 6 cm. in length and 2 cm. in breadth above the middle, but some are longer and broader, others smaller. The leaves on the terminal shoots are as variable, but less narrowed at the base, and generally with a shorter petiole. In their axils stands a spreading woody thorn, sometimes over 7 cm. long, but very often much smaller. On account of these thorns the Aberia is not easy to handle, but is suitable for hedges. Its chief merit, however, is as a fruit tree. It produces regularly every autumn at the beginning of October an abundance of its pretty and pleasant-smelling small yellow fruits. Its taste, however, does not suit every palate, though it is much used for marmalade, &c. Aberia caffra belongs to the family of Flacourtiaceæ, like Azara, to which genus it is closely related. It is a native of Natal, where it is known as the Kei Apple by the colonists. The plants are dioecious, that is, each individual bears only male or female flowers; of course, only the latter will produce fruits. These flowers are small and greenish, and stand in axillary clusters. At La Mortola, Aberia caffra is absolutely hardy, and flowers and fruits in great quantity. Each fruit contains about 1 to 10 seeds. We have every year an increasing demand for these seeds from our colonial correspondents. *Hiain Béger, La Mortola, October 15, 1906.*

THE SCHOOL GARDEN.—By J. E. HENNESSY (London: BAYLIS & SONS, LTD., 50, Old Bailey). This small volume is described as being a handbook of practical horticulture for schools. It contains a wonderful quantity of information, not merely rules concerning the actual work possible in school gardens, but hints on establishing and managing such plots. Thus it is useful to teachers as well as to students; indeed, it may be especially recommended to the former for reference. *The School Garden* can be traced, in the pages before us, from its first planning and tilling, all through the various operations of the year with flowers, fruits and vegetables. The scientific side and the why and the wherefore of the work receive due consideration.

BROCKWELL PARK.—For some years past there has been a Chrysanthemum Show held at this park, and the superintendent, Mr. CURLE, has always done his best to make a good display. But the conservatory adjoining the old residence was not by any means the most desirable place for such a show. A new span-roofed greenhouse has, therefore, been erected at the other side of the old English garden in which the Chrysanthemums are staged. It is not so large as those in other parks, but it is a convenient house for the purpose, and must be greatly appreciated by the many visitors who live in this rapidly increasing neighbourhood. There are, in all, about 700 plants grown, comprising about 150 varieties. As is the case at some of the other parks, decorative effect is aimed at, besides an excellent display of big blooms. The greenhouse allows for a sloping bank of blooms on each side, with a central path, the visitors entering at one end and leaving at the other. The old English garden was at the time of our visit still untouched by the frost, early Chrysanthemums and Dahlias making a fine display, together with many other objects of interest, such as Gourds, and Cobea scandens on arches, Anemone japonica, Ricinus Gibsoni, Asters, Marguerites, Phlox, Antirrhinums, &c. In the greenhouse most of the popular Chrysanthemums, chiefly of the Japanese section, were on view, and were coming on in very promising style. Such shows as these have many hundreds of visitors on the fine Saturdays and Sundays during the season; in some cases, the visitors number as many as 8,000 on a Sunday.

THE WAGES OF KEW GARDENERS.—The gardeners and others employed at Kew consider that their conditions of employment as compared with those in other Government establishments are not fair. We learn that a deputation from the Royal Gardens, Kew Employees' Union, accompanied by the president and secretary of the United Government Workers' Federation, was received by Earl CARRINGTON, K.G., President of the Board of Agriculture and Fisheries, on Monday, the 29th ult. The deputation was introduced by Mr. WILL. CROOKS, M.P., the Director of the Royal Gardens also being present. The gardeners were represented by Mr. W. PURDOM, a sub-foreman at Kew. After hearing the opinions of the men as stated at considerable length, Earl CARRINGTON expressed his pleasure that they had combined, and promised that the whole question of the conditions of employment at Kew should be most carefully looked into. The wages of gardeners in the London Government parks are, we learn, 27s. per week, whilst the gardeners at Kew are paid 21s. per week, and they work longer hours.

SHOWY FLOWERING PLANTS.—From the report of the Ceylon Botanic Garden we learn that special effort has always been made, not so much to grow so-called English flowers, but to discover tropical or sub-tropical plants which can be adapted to the special requirements of a tropical flower-garden. The number of such plants now employed effectively at Peradeniya for massing in beds and borders is fairly considerable, and includes Caladiums, Cannas, Palms, Arundo Donax variegata, Agave, Poinsettia, Coleus, Siphocampylus, Salvia (blue and scarlet), Croskinnera, Acalyphas, Turnera, Helicomias, &c. Of sub-tropical annuals the following amongst others have made an effective display:—Zinnia (Linearis and Sutton's Fireball), Helianthus ("Miniature" and "Dwarf miniata"), Balsams (mixed varieties), Torenia flava, and Amaranthus tricolor. Another attempt made at establishing at Peradeniya the beautiful blue-flowered Salvia patens, which grows well in a few private gardens up-country, has proved a failure. The importance of this policy as regards the development of horticulture and plant improvement cannot be gainsaid.

A YEAR IN MY GARDEN.—By Mrs. ARTHUR TUCKETT. (Melbourne: MELVILLE & MULLEN, 262 and 264, Collins Street.) Mrs. TUCKETT, in publishing her gardening opinions in book form, has followed what has now become a very general custom. She begins, like some other lady writers on this subject, by reminding us of the antiquity of the first garden, that of Eden, and she does not spare us the opinions of Lord BACON, and other much-quoted authorities. Where Mrs. TUCKETT gives the result of her own experiences she writes pleasantly and wins sympathy by striking the mean between over sentimentality and the expression of dogmatic opinions. Her year is one that knows no lack of bright flowers, as her garden is untroubled by snow and frosts. It is in Australia; its whereabouts we are not told, and some English readers will be puzzled for a minute by the accounts of a June winter and of a January of "imperious summer." Some of the writer's wisest remarks are those referring to the value of her native flora. "In no sense," says she, "is it meant to decry the use of plants from other countries. For the discovery of many we must always be grateful. Poor indeed would our gardens be without them, but, at the same time, it seems a matter for regret that more plants indigenous to Australia are not grown in our gardens . . . How seldom one sees Acacias, Hakeas, Cassias, and many other equally good plants!" We have often tried to impress upon our colonial friends the extreme desirability of developing their native flora which is so much more interesting than the stereotyped copies of European efforts. Like all the ladies, Mrs. TUCKETT is enthusiastic about Roses, which indeed are practically indispensable. But she has an appreciative eye for other beauties, and we feel sure that her garden is as well arranged as it is avowedly gay and fragant. The illustrations in the book are pleasing but not flattering portraits of garden scenery, and the whole will be found interesting, though on this side of the water not exactly valuable to other gardeners.

DISHONEST SHOWING.—We have sometimes heard of exhibitors of horticultural produce begging particular "dishes" from their neighbours, which, of course, they should not do if the schedule requires that the exhibitor himself should also be the cultivator. But the following letter which has been forwarded to us by Mr. BARBER, Culham Court, Henley-on-Thames, is an audacious instance of this kind of thing. We suppress the name.

DEAR SIR,—Can you supply me with six or a dozen bag Onions for a collection? If so, will you kindly let me know by return the price of same and weight you can do them?

I should have liked to have seen those you exhibited at the Royal Horticultural Society on the 23rd ult. Perhaps you will have some of those to spare. I am open to give a decent price for some good ones.

Thanking you in anticipation,

I am, &c.

AGED GARDENERS AT WORK.—A correspondent sends us the following extract from a daily newspaper:—"During last week two gardeners, named Messrs. JAMES and JONES, of Lower Caversham, Reading, dug up 30 poles of Up-to-Date Potatos in 10 hours, the crops weighing over one ton. Mr JONES, aged 74, did the digging, and Mr. JAMES, 86, the picking up. This is a good instance of the toughness of some gardeners."

FRUIT REGISTER.

APPLE JAMES GRIEVE (see p. 295).

THIS is the best variety for dessert in October. I used it from October 15, and it kept in good condition until November 7; it is therefore unlike the early varieties which have to be used up quickly. The variety was so strongly recommended to me by the late Mr. Mackenzie, of Linton Park, that I determined to increase it as quickly as possible, and had the grafts put on a nice young standard Apple tree in the year 1900. The head of this tree now measures 12 feet in diameter, and is about the same in height, which shows that it is a good grower. This season the tree has borne a heavy crop of fruits. Like most other varieties it grows largest on the Paradise stock. The best point about it is its luscious melting flesh, which is quite distinct from that of any Apple I know, and almost as melting as that of a Marie Louise Pear. The class for this variety at the recent Royal Horticultural Society's fruit show was well filled. I append a description of it: fruit oval, inclined to conical, 2½ inches high, and 2½ inches wide, very even in its outline; eye small and closed, segments erect, connivent, with spreading tips, set in a shallow and slightly-ribbed basin; stamens median; tube conical; skin waxy yellow, slightly marked with russet, flushed with red on the sunny side, and striped with a deeper red; stalk thin, ¾ inch long, set in a deep and very even basin; flesh yellowish-white, very tender, melting, and juicy, sweet, with a slight aromatic flavour, and a strong perfume; cells obovate, axile, slit; a first-rate dessert Apple in use in October and November. The tree is moderately vigorous and bears well. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

——— Since I penned my note on this Apple I have had much experience with the variety and am impressed with it. It is one of the best sorts we have previous to the ripening of Cox's Orange Pippin. The fruits grow to a good size, are shapely, well-coloured, and possess an agreeable flavour, though not rich. Its flesh is white and does not remain crisp long after reaching maturity. The growth is vigorous, somewhat erect, and its cropping powers seem of the right kind. *E. Molyneux.*

APPLE LORD LENNOX.

I NOTICE in an interesting paragraph by Mr. Geo. Dyke on p. 290, that he speaks of a dearth of good Apples during September. There is a very excellent variety grown locally which I can recommend as a really good September Apple, called Lord Lennox. It is aromatic and very juicy, and has also a beautiful colour and good shape. I have rarely seen it exhibited outside the county, and it is never mentioned in the numerous lists of good Apples which appear from time to time in this journal. If Mr. Dyke is interested, I shall be pleased to send him some shoots for grafting. The fruit is not a long keeper, it ripens about the middle of September and "eats" best when gathered ripe from the tree. It is a large and reliable cropper, and is in every respect a first-class September variety. The flavour is delicious. *Fred Bostock, Spring Hill, Cliftonville, Northampton.*

[This is a well-known Apple and is fully described in Hogg's *Fruit Manual*. We have pleasant remembrances of the fruits eaten as gathered from the tree, in Staffordshire and Lincolnshire, but have not tasted any for some years past. ED.]

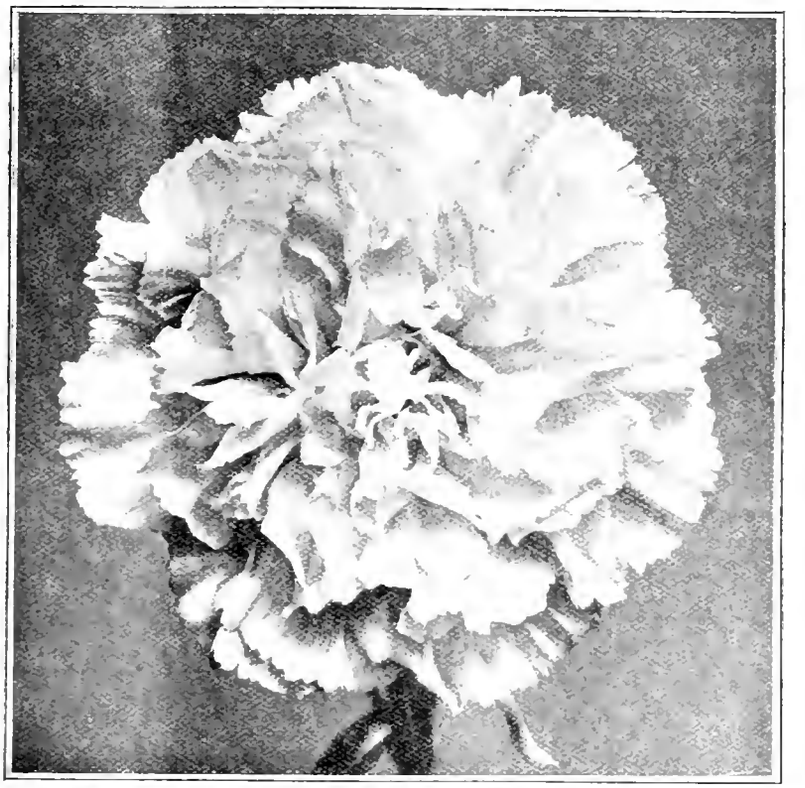


FIG. 123.—CARNATION WHITE PERFECTION (AWARD OF MERIT). (See description on page 247 of the last issue.)

(By permission of Messrs. Hugh Low & Co.)

GARDENERS AND THE AGRICULTURAL LAWS.

IN last week's issue we discussed the reasons why nurserymen apparently do not share the benefits conferred on market-gardeners jointly with farmers by the Agricultural Holdings Acts, which include the Market-Gardeners' Compensation Act, 1895, and it can scarcely be necessary to add that no one begrudges market-gardeners their statutory privileges; the point is that there can be no valid reason why Parliament should not place other growers on the same footing, and the object of the present article is to explain more fully the nature of the privileges in question.

MARKET-GARDENERS.

It is obviously most important for market-gardeners to have some knowledge of these Agricultural Holdings Acts, as they secure many valuable advantages under them, particularly as regards improvements which they may make during their tenancy. There is, however, in this connection one very serious trap for the unwary, as in many cases the tenant cannot, as the law now stands, get compensation from his

landlord for many of these improvements unless he has obtained the landlord's written consent before effecting them; while, in another instance (*i.e.*, that of drainage works), he has to give his landlord a notice in writing before doing the work, and if he fails to do so he loses his right to obtain compensation. Consequently it frequently happens that when a tenant is about to leave his holding, and begins to make out his claim to compensation for the improvements he has made during the tenancy, he finds himself a heavy loser, because at some time or other he failed, through ignorance, to give his landlord formal notice or to get his landlord's written consent, though such consent might readily have been given if asked for at the time.

NURSERYMEN.

Nurserymen also will find it well worth their while to devote some attention to this subject, for, although they share with market-gardeners the benefit of certain statutory reductions in rates and taxes, and are equally liable with them under the Workmen's Compensation Acts, yet (as explained in last week's article on this subject) there is serious reason to believe that nurserymen cannot at present claim the benefits of the Agricultural Holdings Acts, and if they will take the trouble to read through the present article they may think it worth their while to give their moral support to the efforts which the writer has recently initiated with a view to obtaining the early amendment by Parliament of this gross and unjust anomaly. As soon as the necessary arrangements are completed they will be publicly notified, and every nurseryman will then be able to lend valuable help by bringing the subject to the notice of the Member of Parliament for his division.

Now let us consider what are these benefits which market gardeners and farmers enjoy, but which hitherto appear to have been denied to nurserymen. The subject is a little technical, but we will deal with it as lightly as possible.

AGRICULTURAL HOLDINGS ACT.

Let us suppose that you go in for market gardening or farming as a business. The first question which will probably occur to you is what kind of tenancies or holdings come within the scope of those Acts of Parliament which are commonly called the Agricultural Holdings Acts, and which, for the sake of brevity, are usually referred to in this article as "the Special Acts." These Special Acts themselves give the necessary definition, viz.: "Tenancies commencing on or after the 1st January 1884 which are either wholly agricultural or wholly pastoral, or in part agricultural, and as to the residue pastoral, or in whole or in part *cultivated as a market garden*."

Therefore, if the land which you hold as a tenant is altogether agricultural land, or altogether pasture land, or a mixture of both (whether there are buildings on the land or not), then these Special Acts apply to you.

That part of the definition which relates to market gardeners is a little ambiguous, as its wording might seem to imply that where even only a *part* of a holding is cultivated as a market garden the Special Acts would nevertheless apply to the whole of the holding. This, however, is clearly not the intention, and, having regard to one of the provisions of a later and amending Act (which, by the way, is also not so clearly worded as might be desired), we must understand that the Special Acts only apply to *that part* which is actually cultivated as a market garden. Moreover, the term "market garden" is strictly confined to those holdings which are so cultivated *as a trade or business*, and does not extend to kitchen gardens attached to the grounds of private gentlemen, and merely cultivated as a hobby, even though the surplus produce may be habitually sold.

The next question which will probably occur is whether the length of the tenancy in any way affects the matter. The answer is: No, it does not, provided you are tenant for a period of not less than from year to year. Your tenancy may, therefore, be for a period of several years, or only from year to year, or it may be during the life of the landlord, or for the term of your own life, or the life of some other person or persons.

In all these cases the Special Acts in question will apply to you, but it should be borne in mind that these Special Acts apply only to a "tenant," and do not protect you if you hold land merely as an employee of your landlord.

Probably the next question will be: Does the size of my holding make any difference in deciding whether the Special Acts apply to my tenancy or not? The answer is: No, it does not make an atom of difference.

Now, having, I hope, cleared the air a little, we will suppose that your tenancy does come within these Special Acts on the lines indicated above. Your next question will naturally be: What special advantages do I get?

COMPENSATION FOR IMPROVEMENTS.

Well, first of all, you will be entitled to recover from your landlord on the expiration of your tenancy compensation for various improvements which you may have carried out. Before Parliament came to the rescue you might have permanently improved your holding by the expenditure of very considerable sums of money in erecting buildings, fencing, draining, and other matters, but, in the absence of any special agreement between yourself and your landlord, or unless there was some local or trade custom in your favour (these local customs varying according to different localities), you would have had no right whatever to claim any compensation for those improvements, even though the landlord might be able to re-let the property to a new tenant at a much higher rent on the strength of the improvements made by you at your own expense. Nowadays your position is a much more satisfactory one, and you can obtain compensation for many improvements; but if you intend to lay out much money you should endeavour to find out first whether your landlord is the full owner of the property.

The improvements for which you, as a market gardener or farmer, can now claim compensation (provided they are of such a kind as to be of value to an incoming tenant), are as follows:—

(1) Erection, alteration or enlargement of buildings. (2) Formation of silos. (3) Laying down of permanent pasture. (4) Making and planting of osier beds. (5) Making of water meadows or works of irrigation. (6) Making of gardens. (7) Making or improving of roads or bridges. (8) Making or improving of watercourses, ponds, wells, or reservoirs, or of works for the application of water power, or for supply of water for agricultural or domestic purposes. (9) Making or removal of permanent fences. (10) Planting of Hops. (11) Planting of orchards or fruit bushes. (12) Protecting young fruit trees. (13) Reclaiming of waste land. (14) Warping or warring of land. (15) Making embankments and sluices against floods. (16) The erection of wirework in Hop gardens.

In all these cases you can get compensation from your landlord provided (*a*) your landlord's written consent is obtained before the improvements are effected, (*b*) you claim compensation from your landlord before the tenancy comes to an end, and (*c*) you are leaving the premises. There is one important exception to these rules, viz.: in some cases it is not necessary for market gardeners (as distinct from farmers) to get their landlords' consent to the planting of orchards or fruit bushes, as numbered (11) above (see item 24 in this list).

Compensation can also be obtained for:—

(17) Drainage works, provided you give written notice to your landlord not less than three months and not more than two months before the work is begun.

Note that in the case of drainage work, only previous written notice to your landlord is required, and it is not necessary to obtain his consent. Unless you hand the written notice to your landlord in person you should be careful to send it by registered post. Observe also that the notice must be given to your landlord within a fixed period, and you must give details of the drainage work proposed.

The work must be commenced within three calendar months after the date when you gave your landlord the notice of your intention to carry it out. However, your landlord can, if he chooses to do so, elect to carry out the drainage work himself and at his own expense (raising your rent proportionately as provided by the Special Acts), if he informs you of his intention to do so within two months after he receives your notice.

Furthermore, you can obtain compensation for the following improvements (others which interest farmers rather than market-gardeners being omitted), and in respect of these it is not necessary for you either to give your landlord notice, or to obtain his consent:—

(18) Chalking of land.
(19) Clay burning.
(20) Claying of land or spreading blaes upon land.
(21) Liming of land.
(22) Marling of land.
(23) Application to land of purchased artificial or other purchased manure (*i.e.*, manure not produced on your holding but purchased elsewhere).
(24) If you are a market-gardener and hold your land under an agreement in writing made since January 1, 1896, to the effect that your holding shall be let or treated as a market-garden (or if on January 1, 1896, you were occupying the land as a market-gardener, with your landlord's knowledge, and have made, without having previously received written notice of his dissent, any of the following improvements since that date), then you can get compensation for such improvements, although you did not get your landlord's previous *consent*, namely: (*a*) Planting of standard or other fruit trees permanently set out.—(*b*) Planting of fruit bushes permanently set out.—(*c*) Planting of Strawberry plants.—(*d*) Planting of Asparagus, Rhubarb, and other vegetable crops which continue productive for two or more years.—(*e*) Erection or enlargement of buildings for the purpose of the trade or business of a market-gardener.

You should note carefully that the amount of compensation to which you are entitled under the Special Acts depends upon what would be the value of the improvements to a new tenant if one were about to succeed you, though there need not be such a tenant actually coming in or even wanting the land when you leave. What the improvement may have actually cost you does not affect the question. Also, if the value of your improvement is partly increased by the inherent capabilities of the land itself, you cannot claim to be paid for such special increase, as you could not take credit for that part of the increased value which was really attributable to the special virtue of your landlord's land. Note also that if, when you first became tenant, you paid your landlord or the previous tenant (with your landlord's consent) for improvements, which you took over with the land you will, at the end of your tenancy, be entitled to get back a certain amount of what you then paid if the value of such improvements is still running on.

The benefits given by the Agricultural Holdings Acts are additional to any benefit which you may be entitled to claim under the special agricultural customs which may prevail in your own locality.

It must not be forgotten that the above-mentioned privileges in respect of new improvements only apply to improvements which have been executed since January 1, 1884, that being the date when the most important of the Special Acts (viz., the Agricultural Holdings Act, 1883) came into operation; while item 24 only applies to improvements made after January 1, 1896. In the case of improvements executed before January 1 1884, the subject is too complicated to be dealt with in the present article. *H. Morgan Veitch.*

(To be continued.)

PLANT PORTRAITS.

ANTHURIUM ANDREANUM (hybrids): 1, Giant Rose; 2, Empress Chandon de Brialles; 3, A. A. magnificum.—*Le Jardin*, September 15.

ROSE DEAN HOLE, H. T.—*Garden*, September 29.

JASMINUM PRIMULINUM.—*Revue Horticole*, October 16.

MAPLES (variegated and coloured forms).—*Revue de L'Horticulture Belge*, September.

POPPY "MRS. PERRY."—*Garden*, October 13.

HAEMANTHUS LUTEUS DIANUS, QUEEN VICTORIA, petals broader than usual in the genus, scarlet.—*La Tribune Horticole*, October 20.

PETUNIA RHEINGOLD, flowers white with a yellow throat.—*Garten Welt*, October.

HOME CORRESPONDENCE.

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

Berberis × stenophylla Fruits.—With reference to the note on page 262, I may say that the *Revue Horticole* is rather belated in its announcement of fruits occurring on B. stenophylla ×. It is now about twelve years since I first saw fruits on this plant, and I enclose a dozen shoots cut from as many different plants of seedlings from B. stenophylla ×. Out of some three hundred or more seedlings that were raised here I have not seen one come true, but they have all been different from each other, and also from B. stenophylla × and its two parents, B. Darwinii and B. empetrifolia. Some of the forms closely resembled B. Darwinii, but these have all been destroyed to prevent their being propagated as that species. B. stenophylla × does not fruit very freely, but the seeds are quite fertile, though the resulting plants are practically worthless mongrels. The latter vary as much in the flower as they do in the leaf, some of the blooms being scattered and others densely clustered, while in colour they vary from pale yellow to deep orange. As B. stenophylla × can be easily raised from cuttings, its seeds are not often sown. The seedlings we have here were raised for curiosity more than for any other purpose. *J. Clark, Bagshot, Surrey.* [We have seen like forms in the nursery of Messrs. Paul & Son.—Ed.]

Lilium auratum var. platyphylla. This handsome Lilium has succeeded well in these gardens; the three taller inflorescences attained a height of 7 feet 6 inches, and they bore 30 flowers, each of great size and substance. Four bulbs of an ordinary size were planted 4 years ago, and on August 23rd last they produced 9 flowering spikes carrying no fewer than 139 of their beautiful, fragrant "bells." These Lilies receive copious supplies of water in their growing season, with an occasional watering of liquid farmyard manure. *W. H. Green, Eversham, Stillorgan, Co. Dublin.*

Araujia sericifera (Physianthus albens) was introduced into this garden from Angers, France, on March 18 last, and reached about 3 feet high. The plant was kept in a cold house till May 30, and then planted in ordinary soil at the foot of a south-east wall. During the summer it has reached the height of 15 feet, and has produced many good blooms. Just now two fine fruits are ripening, measuring 3 inches in length and 5¼ inches in circumference. The plant being native of South America (Brazil and Peru), this is, I think, an interesting fact. *Emmeline Crocker, The Gardens, Porthgwidden, Cornwall.*

Gardeners' Mutual Improvement Societies.—I would like to ask Mr. Divers whether, in relation to his objection to the inclusion of amateurs, or others not professional gardeners, into the membership of Gardeners' Mutual Improvement Societies, to be consistent, he declines to sit on the committee of any Horticultural Society which includes amateurs? As a Fellow of the Royal Horticultural Society, he is one of thousands of others, three-fourths of whom are amateurs. When he sits on the Fruit Committee he has to elbow amateurs, and if he enquires he will find there is probably not a Horticultural Society in the kingdom that does not include amateurs in its members and committee. What harm has resulted to professional gardeners because of such conjunction? There are many Gardeners' Mutual Improvement Societies which have been existent 20 years or longer. During all that time they have included in their membership amateurs, and even cottage-gardeners. Probably to-day there are not six such societies confined solely to the profession. They have been instituted purely for educational purposes, and in such case the amateur is often able to enlighten the professional. I doubt if ever a case arose in the whole history of these societies in which any amateur ever became a professional, and certainly, if the profession is overcrowded with men "not worthy of it," and whilst easy to assert it is difficult to prove, in any case, if such men belong to Gardeners' Societies their sole object is to improve themselves in professional knowledge. *A. Dean.*

——I often wonder how many of these associations, or of any other horticultural association in this country, there are composed entirely of professional gardeners. I, therefore, cannot understand Mr. W. H. Divers' objections towards these mutual improvement societies (see p. 296) in his recommendations to the professional gardener not to encourage these societies. His article is not consistent with the title of a great many of these societies. I wonder if the thought has ever occurred to him in his professional contributions to the horticultural Press that, by imparting useful knowledge of cultivation and experience of any one article to their columns, he offered it to the profession only? Curiously enough, his last question upon the suicidal tendencies of the gardening profession reflects upon himself, for, immediately following his article upon the federation of these societies, there appears an article from his pen, sending forth to the world his experience of rough plate glass for gardens. This will fall into the hands of amateurs, who will no doubt act upon his experience, and Mr. Divers would be delighted to hear that his words of wisdom had borne fruit; yet he would have us believe that the mutual improvement societies are committing the profession to destruction, solely because other professional gardeners are generous-hearted enough to give lectures upon such subjects as he contributes to the Press. There is not the slightest reason to eliminate the amateur from the ranks of such societies, but they should be encouraged to spread before the nation the delightful and healthy occupation of being horticultural enthusiasts. As one of the originators of the scheme of federation, I am pleased to inform your readers that I have received several replies from societies that they intend to support the scheme produced at the R.H.S. Hall on October 16 last; also the first meeting of the committee is in contemplation. *M. I. M.*

Gardeners' Discounts.—It is very obvious that the offer of a discount of 5 per cent., or more, or less, to any gardener on any account in his employer's name he may run up with any seedsman or nurseryman, constitutes a tempting bribe. The offer is an inducement to a gardener to be dishonest. That is a phase of the question to which all honest, upright traders should look. Did all employers inform traders that any such offer or payment of discount proved, would at once lose the employer's custom, and the receipt of the bribe result in the immediate discharge of the gardener, in both cases terribly drastic courses, it is difficult to assume that any trader would risk so much, or the gardener either. Seeing that the object of the discount is to induce the gardener to order largely, in fact, beyond his requirements, is not such practice very immoral? Defence of it seems to be impossible. That the best corrective of the evil is to be found in a material increase in gardeners' salaries, there can be no doubt. Were an increase of some 20 per cent. given with the drastic intimation above mentioned, gardeners would be greatly relieved from that form of temptation to which general low wages and the cupidity of traders subjects them. *A. D.*

——From time to time I have been interested in your notes and information on the Corrupt Practices Bill, but never more so than in your last issue, which contains some valuable and sound comments. I quite understand that there are some, possibly the majority, who would like that the usual discount of 5 per cent. should be treated as a recognised, legitimate custom, but I should be glad if someone of these would explain in your columns how it can be legitimate. I think if anyone will look at the matter fairly, their own conscience will convince them that the system is nothing but bribery and corruption—a curse to anyone trying to do business in a straightforward way. In place of any members trying to continue this 5 per cent., it would be far better for all if they would agree to fall in with the requirements of the Bill, and take advantage of the opportunity now offered to break the fetters upon honourable dealing. Certainly, as you say, the traders are chiefly to blame. There is some truth in the statement that if the master who pays the bill is aware of the practice there is no harm done; but these are few. I am certain that the great majority of the nobility and gentry throughout the country would "give points" to the gardener who was above receiving discount, compared with him who accepted it, knowing that with it a certain amount of influence was gained towards buying an order. I consider you strike the right keynote when you say "that the much better plan would be for the master to pay a fair price for his purchases, give higher wages, and not expose his servant to the temptation of receiving unearned increment." Whilst the traders are chiefly to blame, the gardeners also have their share. One can pity and sympathise with the poor fellows who are paid about 20s. per week, and on this have to struggle to keep body and soul together, not only for themselves, but for wife and family; one can almost excuse such an one from accepting the few shillings offered by the agent of the nursery or seedsman; but the gardener who holds a responsible position in a large place, and is paid from £3 to £5 per week, one cannot excuse. In this case, by the way, the orders are large and the discount large. The gardener purchasing for his employer is in the same position as a manager in any commercial house entrusted with the buying, where, if he is to be fully trusted, he would not think of, nor would he be allowed to accept discounts. What gardener starting business on his own account, finding it necessary to allow a servant to do the buying, would allow him to take discount? Therefore, whether the gardener who is poorly paid or well paid, so long as he is buying for another man, he is not justified in receiving discounts from those he is trading with; but knowing that gardeners are always willing to impart information to their fellows, and to give a reason for it too, I would now ask if someone will explain through your columns what right they have to accept discount from the traders, and how it is conscientious on their parts to do so? *A. S. A Nurseryman.* [The dealers have this matter in their own hands. The great difficulty we see lies in the fact that our traders cannot control the action of their foreign competitors.—Ed.]

Thefts at the Fruit Show. Will you allow me to draw attention to the petty thefts carried on at the Royal Horticultural Society's fruit show this year? As I was unable to attend personally on the second day, I sent two men to pack the fruit, but they arrived home minus my 1st prize fruits of Blenheim Pippin, Newton Wonder, Bismarck, and Pitmaston Duchess. Surely gardeners would not demean themselves by committing such thefts. As it is my first year of exhibiting, an unfavourable impression is left regarding the arrangements made for clearing. It would be interesting to me to hear if anyone else has had to incur similar losses and vexation. *B. J. [illegible], H[illegible] Place Gardens, Maidstone.* [We are convinced the R.H.S. officials take all possible means to ensure the safe custody of exhibits, but after the time has arrived for clearing they are powerless to prevent single dishes of fruit, for instance, from being taken by persons unknown to them. They may or may not be the exhibitor's assistants, or they may have been given the fruits, as is frequently the case. A voucher system would necessitate considerable delay, and it is questionable if the value of the exhibits is always sufficient to render its adoption advisable. Every exhibitor should look after his fruits directly the hour of exhibition closes.—Ed.]

Gros Colmar Grape (see Mr. Clayton's remarks on p. 274).—We should hear less of the poor flavour of this Grape if cultivators would give it a longer growing season and afford the vines plenty of heat and air. Some twenty years back, having charge of a vinery planted with this variety, being dissatisfied with the colour and flavour of the fruit, we decided to start the vines six weeks earlier, giving them more heat with a continual circulation of air in the house. The result was almost perfect colour and flavour. That well-known expert, the late Mr. Meredith, of Garston, tasting a sample in November, said they were equal to Black Hamburgh. The paragraphs in the *Gardeners' Chronicle* for November 25, 1893; January 14, 1896; and February 13, 1897, refer to these vines and Grapes. *J[illegible] B[illegible], M[illegible], St[illegible].*

Amaryllis Belladonna in Cheshire.—This delightful autumn flowering plant has succeeded well with us this year. Two years ago we planted four dozen bulbs, which flowered very freely last year, but we added still more to our stock this year. The results have been most satisfactory, the spikes being from 2 feet to 3 feet in length, and carrying from six to eight perfectly-developed blooms. These are planted under the greenhouse walls, a trench being taken out 18 inches deep, and filled with equal portions of good fibrous loam, leaf-mould, and

sand, the bulbs then being inserted 18 inches deep. Here, in Cheshire, we are very much exposed, which necessitates such deep planting. The bulbs were surrounded with sand and covered with the compost, which is pressed firmly around them. Eremurus himalaicus robustus does equally as well here. This year the plants had spikes 10 feet high. These are under the same treatment as Amaryllis. We always give them a good mulching of litter for protection. *R. Richards, The Hostages, Holmes Chapel.*

LATE FLOWERS IN THE ROCK-GARDEN.—In the rock-garden here we have still the following plants in flower: Androsace lanuginosa, Saxifraga Fortunei, Zauschneria californica splendens, Lithospermum prostratum, Œnothera Youngii, Plumbago Larpentæ, Schizostylis coccinea, Mesembryanthemums in variety, Convolvulus cneorum, Polygonum chamæbuxus purpurea, Campanula Portenschlagiana major, Sternbergia lutea major, Colchicum autumnale album, fl. pl., Eryngium pandanifolium, Metrosideros floribunda (on south wall), Solanum crispum and Romneya Coulteri. The herbaceous plants, including Dahlias, are as bright as ever. *W. A. Cook, Leonardslee Gardens, Horsham.*

NATURAL VARIATIONS OF GERBERA JAMESONI.—W. W. is much to be thanked for the highly interesting information conveyed under the above heading at p. 288 of issue of October 27. It should be borne in mind, however, that while crosses were raised within the species G. Jamesoni, to which reference is made, there was also a number of hybrids raised between the various varieties of G. Jamesoni and the quite distinct species G. viridifolia. The introduction of this species gave freer flowering and freer growing habit to the strain, so that many of the plants in the hands of Messrs. James Veitch & Sons are still quite different from anything found in nature. Some of the viridifolia hybrids, though not the most gorgeous, have been among the most attractive. *R. Irwin Lynch.*

APPLE JUDGING AT THE FRUIT SHOW.—As one of the judges in the single dish classes at the late Fruit Show, I thank *D* for his kindly advice anent the method of awarding the prizes (see p. 295). As a matter of fact, my colleagues and myself did collect the best dishes where the first three or four were close in point of merit, but in all cases we did not leave them so arranged, but returned each to its original position. I note also what is said about the fruits of Allington Pippin being so large. They were of exceptional size, but as they were well coloured, even, clean and uniform in size, what could the judges do but place them first? If they were too large for dessert, why is Doyenné du Comice Pear, or Muscat of Alexandria Grape cultivated as large as is possible, and yet admired and considered to be the right thing? *M.*

AMERICAN VARIETIES OF CARNATIONS.—At the meeting of the R.H.S. on October 23, an award of merit was given for a Carnation called St. Louis, which I am firmly of the opinion is none other than the new American variety Victory, it being identical in colour and general build. On one of the stands I noticed a variety labelled Mr. W. H. Oniwake: this, I believe, is Rose Enchantress, and sent out in America as such. This renaming of varieties by importers, if allowed to continue, will lead to complications. It brought much trouble years ago; for instance, Ethel Crocker which was re-named by a London firm Royalty, Enchantress re-christened Fascinator, and several other instances I could quote. Gardeners do not want to buy the same variety under two names. *New Yorker.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 23.—*Present:* G. Massee, F.L.S., V.M.H. (in the chair); Messrs. E. M. Holmes, C. E. Shea, G. Gordon, W. C. Worsdell, J. T. Bennett-Poe, G. S. Saunders, C. H. Hooper, H. T. Gussow, W. Cuthbertson, E. A. Bowles, F. J. Baker, Dr. A. B. Rendle, and F. J. Chittenden (hon. sec.).

Grit in Apples and Pears.—Rev. Prof. Henslow sent the following additional note regarding this subject, which had been adverted to at the last two meetings, together with the fruit of Pyrus japonica and dried slices of the same. "When the cellular tissue of the pseudocarp of Pyrus japonica contracts, the grit stands out conspicuously; it is thus seen to form a rather compact layer surrounding the core with ten radiating arms extending nearly to the circumference of the fruit. No grit occurs in the external part of the pseudocarp. The inference is that the original stone is still represented, but in a much reduced state, and that it is beginning to be dispersed through the pseudocarp. The numerous ovules in two rows in each carpel are worthy of note; they are reduced to two only in Apples and Pears." The members of the committee thought that much more evidence would have to be brought before it was proved that the sclerenchymatous tissue belonging to the endocarp could be diffused through an axial structure such as the flesh of the Pear.

Galls on Birch.—Mr. C. H. Hooper showed galls on Birch caused by the gall mite, Eriophyes rudis. The buds had failed to develop properly, and the trees suffered severely, sometimes dying after a short time, particularly when the attack on the tree is general. The result of a local attack is often the formation of the well-known "witches' broom." Trees locally affected often live for many years. In one case mentioned, a large "witches' broom" had been known upon a tree for forty years. The mite and its galls have recently formed the subject of a memoir by Mr. Gussow. (See Naturwissensch, Zeitschrift fur Land und Forstwirtschaft Heft 10, October, 1906, pp. 421-429. 2 pl. and 10 illus. in text.)

Fasciation in Ophiopogon.—A specimen of Ophiopogon spicatum was shown by Mr. E. M. Holmes fasciated at the apex of the inflorescence.

Fruiting of Lilium candidum.—Mr. Cuthbertson showed a plant with fully developed but unripe capsules, one of between thirty and forty that had so developed this year among about two hundred plants. The fruiting plants were just producing leaves, while those that had not fruited had produced foliage leaves several weeks ago. There had been no difference noticed among the flowers, but it was suggested that possibly the fruiting plants belonged to Lilium peregrinum, which differs from L. candidum in the narrower perianth segments.

Bi-coloured Marrow.—Miss Eddy, of Teignmouth, sent a small Marrow, the upper part of which was green, the lower yellow. All the fruits on one branch of the Marrow had been of this character, and on being cooked it was found that the green part tasted more like a Pumpkin, being hard, and having less flavour than the Marrow. The occurrence of these bi-coloured fruits is not uncommon.

Injury to Ferns.—An example of Pteris serrulata, one of some hundreds, was received from Chislehurst, having dark brown lines running along either side of the midrib of the pinnæ. Mr. Saunders will report upon them at the next meeting.

Winberries Dying.—Plants of Wineberry dying were received from Ranceby. No fungus or insect to account for the trouble could be found, and the roots were very thick and old. It was thought the plants had probably remained in one place too long a period.

Reputed Wild Dahlia.—Some sprays of a plant raised from seeds from America sent to Mr. Murray Thompson, secretary of the Royal Caledonian Horticultural Society, and reputed to be those of the wild Dahlia, were received from Messrs. Dobbie & Co., of Rothesay, who had had it growing outdoors until October 1, when it was placed in a tub and removed under glass. The habit of the plant was that of a Bidens. It had attained a height of 8 feet to 9 feet, and was of a very free branching habit. The inflorescences, however, lacked ray florets, and were by no means conspicuous. The seeds produced were like those of the Dahlia in most respects, but had two small horns on each. Dr. Rendle will report upon this at the next meeting.

Beetles in Beech.—Mr. Saunders reported that the beetles in the Beech wood shown at the last meeting were Smodendron cylindricum, a species nearly allied to the stag beetle. He considered that they fed in dead wood usually, and did not attack healthy trees.

Diseased Fruits, &c.—Several specimens of diseased Apples, Pears, Potatos, &c., were received and dealt with.

ROYAL HORTICULTURAL OF IRELAND.

FRUIT CONFERENCE AT DUBLIN.

OCTOBER 24, 25.—As supplementing our notes taken on the first day of the Irish Fruit Show, held in Dublin, and published in our last issue, it remains to be said that a conference held in connection with the show excited much interest.

Mr. F. W. Moore, in the unavoidable absence of Lord Ardilaun, President of the Royal Horticultural Society of Ireland, opened the proceedings by commenting on the importance of fruit-growing to Ireland, and the suitability of the country for its practice. Referring to the exhibits, they were collectively, in his opinion, superior to what he had seen the previous week at the Royal Horticultural Show in England, and a country which could produce such fruit need not fear foreign competition. Mr. Moore then read his paper, dealing with the best varieties of Apples, and enumerated a selection of 10 dessert and 12 culinary kinds, covering the season from July to May. He stated that, whilst his list excluded some old friends of proved merit, it had to be remembered that growers and vendors alike suffered from the existence of too many sorts ripening approximately together. This led to an animated discussion, old growers advocating the claims of old friends excluded from the list. That a plethora of sorts handicaps the grower for market, however, is a fact, inasmuch as a Dublin trader told the writer he always ordered "Americans," knowing that he would get one thing, in preference to home produce, which might mean anything save one variety in quantity.

INSECT AND FUNGOUS PESTS.

Professor Carpenter's lecture on insect pests, illustrated by lantern slides, chiefly dealt with the ravages of the sawfly caterpillar, winter moth, aphis, and scale, and the means of coping with them, adverting to the benefits which had accrued in America from the co-operation of cultivators and naturalists. At the resumption of the conference on the second day Professor Pethybridge, by the aid of lantern slides, exposed the doings of the American Gooseberry fungus, Sphærotheca mors-uvæ, which, although known to have appeared in 14 distinct localities in Ireland, had not, so far, been found in England. He next described the cause and cure of Apple canker. A graphic description of the evils of bad pruning, with the necessity of clean cutting, and the application of gas tar to the wounds in order to exclude fungoid germs, with some practical advice by Mr. James Harpur on preparing and packing fruit for market, concluded the conference.

HONORARY EXHIBITS.

Referring to exhibits unnoticed in the report in last week's issue, it should be stated that the exhibits comprising fruit, foliage, and plants staged by Messrs. W. Drummond & Sons, Ltd., and Sir James W. Mackey, both of Dublin, were each awarded the Society's Gold Medal.

In the vegetable classes, Colonel the Hon. F. C. Crichton, and John Jameson, Esq., were the chief winners in a keen competition, which, however, was absent in the Grape classes, where Sir Ernest Cochrane (gr. Mr. Colgan) had practically his own way with well-finished, medium-sized bunches.

The fruit-packing classes brought forth a spirited contest. For one dozen dessert Apples in a "flat," there were 29 entries; 25 for the two dozen class, and 33 entries for the two dozen cooking class. Classes for 14 barrels, 15 half-bushel cases, and smaller exhibits, exercised the expert called in to judge them for some time, and he afterwards impressed on those interested the principal points of success in marketing, viz., grading, quality, and condition of fruit, and suitability for transit. What the uninitiated observer would regard as virtues in packing, that is, considerable time spent over it, with the too liberal use of fine packing material, were described as vices by this expert.

As no entry fees were charged throughout this exhibition, which, by the way, was visited by the Hon. John Dryden, ex-Minister of Agriculture for Canada, pessimists predicted that a good deal of inferior stuff would be staged. Such was not the case. It was a remarkable show, and should do much to encourage Irish fruit growers, and extend the industry they are engaged in. *Erin.*

HORTICULTURAL CLUB.

IN THE WORLD OF FERNS.

On Tuesday, October 23, the usual monthly dinner of this Club was resumed after the autumnal vacation, and Mr. Chas. T. Druery, V.M.H., F.L.S., subsequently gave a lecture, illustrated with lantern slides and nature prints, on the marvels of Fern life. The first five slides were reproductions of the beautiful drawings with which Count Suminski, in 1848, illustrated his discovery of the final link in the life cycle of normal Ferns, by the discovery of the "archegonia" or equivalent of the female part of flowering plants. The series demonstrated all the stages of development from the spore to the young plant in the clearest manner. The lecturer then proceeded to describe and illustrate the abnormal modes of reproduction subsequently discovered, showing that every one of the stages in the normal life cycle could be suppressed singly or by twos and threes, and yet the final result of a new generation be secured. This purely technical part of the lecture was merely introductory to a number of beautiful slides, illustrating the marvellous capability of Ferns for sporting quite suddenly into different types from the parental ones. He proceeded to show what could be done, and had been done, by profiting by the known capacity of the spores of such finds to produce emphasised types on similar lines: a fern, for instance, with a small crest or tassel at all tips, yielding progeny with larger ones, and so on. Especially in connection with Ferns which had sported into more divided ones was this the case. A once divided or pinnate Fern, for instance, with smooth edges, may produce a sport with saw-toothed edges, and this may yield divided or bi-pinnate seedlings, or even tripinnate ones by selection. Representations of pedigree Ferns of this description were thrown on the screen, demonstrating that even in one generation an immense stride may be effected in this direction, and that even two distinct sections, tasselled and untasselled, may arise quite suddenly and unexpectedly in a single batch of sporelings. Mr. Druery then displayed a number of fine nature prints of the most marked wild sports selected from those prepared and issued to subscribers by the late Colonel A. M. Jones, of Clifton, one of the chief pioneers of the British Fern cult, of whom but very few now survive, but to whose efforts the Fern-loving world will be ever indebted. It is, too, on the scientific side of the study that we are indebted to British Ferns and their students for the chief discoveries in reproductive phenomena, some of which may have far-reaching results when the full reports of the experiments now in progress are published to the world. The discovered analogy between some abnormally reproductive Fern-cells and those of that terrible scourge cancer may be cited as a case in point, the botanist and the pathologist thus finding an entirely unexpected link which may quite possibly give a clue to the cure of that dread disease, and, in any case, furnishes some indication of its nature. A discussion, followed by a vote of thanks to the lecturer, concluded the proceedings.

NATIONAL CHRYSANTHEMUM.

OCTOBER 29.—On Monday evening last the Executive Committee of the above Society held a meeting at Carr's Restaurant, Strand, Mr. Thomas Bevan presiding. It was announced that the annual dinner was definitely fixed for November 27. It is expected that the president, Chas. E. Shea, Esq., will take the chair, and that it will be held in the Venetian Hall, Holborn Restaurant. Judges for the November show having already been elected, the committee proceeded to nominate them to the various classes appointed by the schedule. A question arose as to a new design for the Society's certificate, but it was considered too late in the season to make any alteration now, and the matter will stand over until later. An approximate financial statement was then presented by the secretary, and a good deal of discussion ensued upon finance generally. Among other matters it was resolved that the proposed issue of the Society's Yearbook should proceed without delay. A sketch of the Dean Memorial medal was submitted, and the matter was left in the hands of Mr. Witty, sen. Thirty-two new members were elected.

Obituary.

JOHN SHINGLER.—We have received from Messrs. Tom B. Dobbs & Co., nurserymen, Wolverhampton, news of the death of this gardener at the age of 86 years. Deceased was a native of Oaken, and his first position as head gardener was under the late Mr. George Benjamin Thorneycroft, who was the first Mayor of the Borough of Wolverhampton. He subsequently served under other local gentlemen, including the late T. P. Lamb, Colonel Thorneycroft, Tettenhall Towers, Mr. Sparrow, Graiseley, Mr. Fowkes, Penn Court, and Mr. John Ward. Deceased retired from the profession seven years ago. His son, Mr. William Shingler, is a gardener in the district.

HORACE HUNTLEY.—We regret to announce the death of this well-known gardener, and, for several years past, Instructor in Horticulture to the county of Dorset. Deceased, who had lately been suffering from general failure of health, passed away on Tuesday, October 23, at the age of 70. For the last 10 years he had occupied the position of Instructor in Horticulture, and beside serving the county of Dorset, he had previously held appointments as Instructor in Horticulture to the counties of Lincolnshire, Cumberland and Huntingdonshire. He was gardener at Moor Hall, Harlow, for 23 years, and he was also at Powis Court, Welshpool, which establishment he left when he commenced the work of lecturing. Deceased's son, Harry, is a representative of Messrs. W. Cutbush & Sons. The funeral took place on Friday, October 26, at Teddington St. George Churchyard.

ENQUIRIES AND REPLIES.

PEACH BUD-DROPPING.—I thank *H. W. W.* for his reply on p. 281, respecting the dropping of wood-buds. The trees were not forced, ripe Peaches not being required here until the latter part of July. The trees were free from red spider and aphis. I can't understand so many wood-buds dropping and yet not 3 per cent. of the fruit buds. My past experience has been quite opposite to this. Surely the reason *H. W. W.* gives would cause both fruit and wood-buds to drop. *S. I. D.*

WHAT IS MEANT BY "AN AMATEUR." The word "amateur," I think, is far from clearly understood. I, for one, always understood that an amateur meant a person who does not employ a gardener regularly, or one who does not get his living by gardening, or sell his produce for a living. I find this is not so: I know two cases in point. The first is a winner of two first prizes in the amateur class at one of the leading shows, but he sells seeds, bulbs, &c., for a living. The other is a gentleman showing as an amateur; he, too, was amongst the prize-winners, but he employs a gardener regularly. Curious to say, these two competitors were competing in the same class. *J. S. H.* [The schedule must be looked upon as the authority in each instance, for the simple reason that different constructions are placed upon the word by the various societies. The Royal Horticultural Society, in its "Rules for Judging," states that "the term amateur is here employed in its broadest sense, i.e., in contradistinction to nurseryman. In some schedules the word is used more strictly, defining an amateur gardener as one who employs no professional help whatever in the cultivation of his garden; in contra-distinction to an amateur owner who cultivates by means of professional gardeners in his employment." In the schedule of the National Dahlia Society, which should apply to your case, it states that "no person shall be allowed to compete as an amateur who sells plants, flowers or roots; nor any person in the employ of a nurseryman."—ED.]

ANSWERS TO CORRESPONDENTS.

ADDRESS. *C. T. D.* Messrs. Backhouse & Son, Ltd., York.

AVOCADO PEAR: *F. H.* This fruit is seldom cultivated in this country, although it may sometimes be seen in botanical gardens, such as that at Kew. The fruits are sold in Covent Garden, and may be obtained from Mr. H. Kauffman, Central Avenue, Covent Garden Market. See current list of market prices in this issue.

BRACKEN (PTERIS AQUILINA): *A Young Gardener.* Bracken may be increased either from spores, borne on the fertile fronds, or from rhizomes. If the latter means be resorted to, it is better to take rhizomes, or under-ground stems from the open ground in late winter or spring, and establish them in pots in an unheated frame. When established they should be planted where they are required. Bracken is very difficult to remove from one place to another by planting the rhizomes without establishing them first as advised. The Oak is Quercus coccinea, and the acorns are abortive.

CLIMBING FRENCH BEANS: *W. A. T.* Seeds of these may be sown at the present time with every prospect of success. A suitable atmospheric temperature is 60°, which may be permitted to rise 10° higher with sun heat. Sow the seeds thickly, and when the plants are well through the soil thin them out to 6 inches apart. A moist atmosphere is necessary to keep the plants free from red spider. The variety that most freely sets its flowers is Princess of Wales.

FIG. 124.—GLAZIELLA MICHELIANUS.

CORRECTION: In the article by Mr. W. H. Clarke on Apricots on p. 288, col. 2, under "Stocks," the fourth word in second line should read "Brussels" not "Mussel."

CURRANT-BUD GALL MITE: *Ribis.* Judging from the description contained in your letter, we fear there is nothing to be done in such a case except dig up the plants and burn them. If your garden is a small one, and surrounded by cottagers' gardens which also contain bushes affected with "big bud," the chances are that fresh stock would be likely to become contaminated. If you decide to get fresh stock, you had better select the variety Boskoop Giant, and spray the bushes frequently and thoroughly with soft soap and quassia in water.

DENDROBIUM UNDULATUM: *A. M. D.* This species produces upright spikes of whitish, brown-tinted flowers. We do not know where you could find a figure in a work easy of access.

FUNGUS: *R. P. B.* Geaster Michelianus, see fig. 124.

GOURDS: *C. W. J., Devon.* The plant shown in photo A, is that of Cucurbita ficifolia, and that in photo B, the bottle Gourd, an elongated form of Lagenaria vulgaris.

FUNGUS IN LAWN: *H. D. W.* The fungus is the Champignon, Marasmius oreades, an edible, and highly-prized Mushroom. Your best plan will be to fork out the mycelium (the white thread-like growths of the fungus) as far as is possible, and, after an application of fresh soil, to sow some grass seeds. See fig. 125.

IVY-LEAVED PELARGONIUMS: *H. K.* You may apply a little extra warmth from March onwards, but sunlight and fresh air are the chief essentials. Any straggling or runaway shoots may be stopped up to the end of April and all flowers removed until that period. Madame Crousse is one of the most popular sorts for baskets. Mrs. C. Banks is a white variety of the same habit of growth. Baden Powell is of blush mauve colour, and very free in flowering. Mrs. Hawley is deeper in colour than Souvenir de Chas Turner, and is one of the best. Galilee is another variety which is extensively grown, and may be recommended as very free in flowering.

MARGUERITES: *H. F.* The variety most generally grown for market is Chrysanthemum frutescens, variety Hallen maxima. The ordinary type of *C. frutescens* has glaucous, finely-cut foliage and there is a variety with smaller flowers and very finely-cut foliage of a blush grey tint named *C. frutescens tripinnatifida glaucescens*, but this is not much grown at the present time. The best yellow variety is Etoile d'Or. We have had no experience in raising them from seeds, but it is probable seedlings would exhibit variations.

MUSCIPELIVA: *H. W. P.* The bulbs are quite free from injury caused by fungi or bacteria. The cause of failure has yet to be determined.

NAMES OF FLOWERS AND FRUITS. We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruit. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *E. H. K.* Apple Blue Pearmain. *J. T. W.* 1, Sheppard's Fame; 2, Reinette de Canada.—*H. A. M.* 1, Alfriston; 2, Allen's Everlasting; 3, Fearn's Pippin.—*R. Blake.* 1, Welford Park Nonsuch; 2, Gipsy King; 3, Golden Noble; 4, Beurré Rance.—*M. C.* 1, Basmer; 2, Ribston Pearmain (not to be confused with Ribston Pippin); 3, Small's Admirable; 4, Warner's King; 5, Hawthornden; 6, King of the Pippins.—*W. H. E.* 1, Beurré Diel; 2, Winter Nelis; 3, Beurré Steckmans; 4, Joséphine de Malines; 5, Gansel's Bergamot; 6, Comte de Lamy.—*H. Nixon.* 1, Malster; 2, Lord Grosvenor; 3, Small's Admirable; 4, Waltham Abbey Seedling; 5, Pine Golden Pippin; 6, Winter Greening.—*W. Done.* Lemon Pippin.—*Interested.* No. 1 was much over-ripe, it resembled Pitmaston Duchess; 2, Beurré Diel. You should have given your name and address, not necessarily for publication.

NAMES OF PLANTS. *H. B.* 1, Aster Novi Belgi Robert Parker; 2, A. N. B. Purity; 3, A. Novæ Angliæ rubra; 4, A. vimineus variety; 5, Solidago serotina; 6, Helianthus decapetalus.—*J. M.* 1, Aster Novi Belgi Purity; 2, A. vimineus; 3, A. diffusus orientalis. *W. T. Y. Z.* Euonymus europæus (Spindle tree. British).—*H. H.* 1, Tibouchina semidecandra (Pleroma macranthum of gardens); 2, Arbutus Unedo; 3, Passiflora racemosa (P. princeps of gardens); 4, Griffinia hyacinthina; 5, Agathea cœlestis.—*W. H.* 1, Aster vimineus; 2, A. ericoides Cho; 3, A. diffusus horizontalis; 4, A. turbinellus; 5, A. cordifolius major; 6, A. Novæ Angliæ roseus. Our correspondent should have sent larger specimens, the tips of the flowering stems are not usually sufficient.—*W. L., Reading.* 1, Gymnogramma (Dictyogramma) japonica; 2, Adiantum Waltoni; 3, A. Pacotii; 4, A. cuneatum; 5, A. cuneatum grandiceps. *J. A. B.* 1, Cattleya labiata; 2, Oncidium cheirophorum; 3, O. candidum, often called Palumbina candida; 4, Octomeria diaphana; 5, Catasetum tabulare; 6, Cochlioda vulcanica. *F. A. P.* 1, Catasetum barbatum; 2, Gomesa recurva; 3, Miltonia Regnelli; 4, Stenoglottis longifolia.—*R. N. H.* Saccolabium bigibbum, figured in the *Botanical Magazine*, tab. 5,767.—*F. H.* Justicia carnea.—*W. R. H.* The Osmanthus is O. ilicifolius, a form of O. Aquifolium. The Abelia in flower is A. floribunda, and the other A. triflora. The flowers you send are a proof of the exceptional character of the weather.

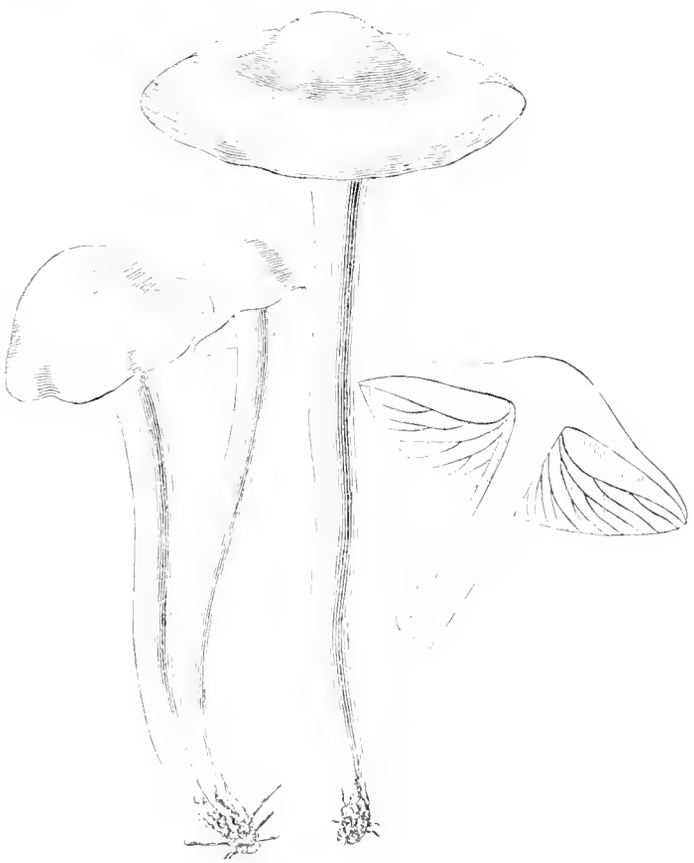


FIG. 125.—THE CHAMPIGNON: MARASMIUS OREADES.

POINT JUDGING OF FRUITS AND VEGETABLES: *T. S., W. M.* The only recognised basis for judging these products by points at exhibitions is found in the Royal Horticultural Society's "Rules for Judging," a copy of which can be obtained from the secretary of the society, Vincent Square, Westminster, S.W., by enclosing a postal order for 1s. 6d., or our publisher could supply it. It is on the basis of points laid down in these rules that collections of fruit are judged at Shrewsbury, and probably at some other exhibitions where "pointing" is the rule in making the awards, and the respective numbers of points are published. Vegetables are not judged by points at Shrewsbury such a system being in their case not insisted upon. Generally the system is best, but unless enforced on judges, they seldom adopt it. At Reading the practice is made compulsory, so far as vegetables are concerned, and the points awarded to each dish are published. In this case the "Rules for Judging" basis is adopted.

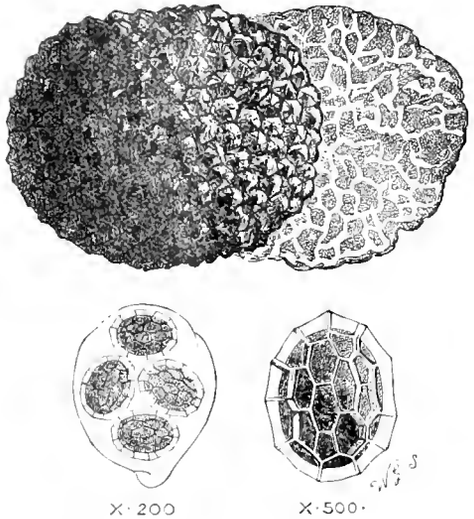


FIG. 126. THE TRUFFLE: TUBER ÆSTIVUM.

SEEDLESS GRAPES: *Author.* Yes, the Black Monukka Grape is usually seedless, so are the Sultanas which come into the market. The seedless Orange is probably the result of improper fertilisation. The Apple blossoms are fertilised by the agencies of insects, and wind.

TRUFFLES: *T. Z.* They are found wild, generally beneath the shade of Beech trees. The plantations of Beech trees on Salisbury Plain are especially productive of Truffles. Truffle hunters employ dogs, and occasionally pigs, to locate the plants. The commonest species met with in our markets is Tuber æstivum, illustrated at fig. 126. The plant known as the Pignut, or Earthnut, has no relation whatever with these esculents.

VINES: *H. S.* The condition is due to the wood having first received injury, and subsequently irritation has been set up by mites or other means which has caused hypertrophy or enlargement of the tissues.

VIOLETS: *H. R.* It is certainly advisable to plant from the runners in the spring, and destroy the old plants after the runners have become well established. Princess of Wales is the most popular large, single blue variety, and is sweet scented. La France and Kaiser Wilhelm are also fine varieties that produce large flowers. White Czar is an excellent white variety when it is true, but it is inclined to revert to the purple-blue, and sometimes it is only tinted with blue. The flowers of Rawson's White have generally a pink tinge. The blue Violets seen during the summer, which are scentless, are of a variety of Viola cornuta or a nearly allied species. Thanks for 9d. sent for the Gardeners' Orphan Fund. The other question will be answered next week.

COMMUNICATIONS RECEIVED.—F. A. A. (the shilling shall be given to the Gardeners' Orphan Fund)—F. H., West Dulwich—G. S. K., Cork—J. O'B.—E. W. P.—W. S. L., Manila—L. G. H. Dujardin—T. H. Elliott—G. F., Canada—A. O.—Jno. Blakey and N. I. H. & Sons (both next week)—F. M.—Nat. Rose Soc.—W. G. S.—W. and N.—S. B. and Sons—G. P. 2s. for Orphan Fund, thanks—G. M. D.—J. W. K.—A. M.—A. G.—Ross—D. and S.—F. A. L.—C. B.—I. J.—A. B. J. M.—W. C. and Sons—A. C. H.—H. R.—W. P.—F. M.—F. W. Sears—W. H. D.—C. R.—T. H. S.—F. B. T. J. B.

THE
Gardeners' Chronicle

No. 1,037.—SATURDAY, November 10, 1906.

CONTENTS.

ILLUSTRATIONS.

THE AMERICAN GOOSEBERRY-MILDEW DISCOVERED IN ENGLAND.

IN the course of a recent article dealing with the outbreaks of the American Gooseberry-mildew in Sweden during 1905-6, of which I gave a translation in last week's issue of this journal, Professor J. Eriksson called attention to the important fact that Ribes aureum, the stock used in the raising of standard Gooseberry bushes, is very subject to the disease.

Immediately on receiving Professor Eriksson's article, I began making enquiries at English nurseries concerning the trade in imported plants of Ribes aureum, and I learnt that not only are unworked plants of Ribes aureum imported from the Continent, but also standard Gooseberry bushes on this stock. Subsequently I visited several nurseries. I have now to report that in one nursery I discovered the winter stage of the American Gooseberry-mildew on the young wood of a number of standard Gooseberry bushes on R. aureum stock. These standards had lately been imported from the Continent. In the nursery where the disease occurred there were large plots of ordinary Gooseberry bushes, but I was not able to detect that the mildew had spread to these. The owner of the nursery, on being informed of the occurrence of the mildew, and of the serious nature of the disease, at once volunteered to burn all the standards, and promised, should the disease appear next spring on other Gooseberry bushes, to carry out the strictest possible preventive measures.

In face of the recent articles which I have published on the subject, it is hardly necessary to dwell on the seriousness of the present state of affairs now that the actual existence of the disease in England is known. All associations and societies of nurserymen and gardeners should at once warn their members of the possibility of already harbouring the pest in their nurseries or gardens on recently imported standard Gooseberry bushes. Much good may be done in this way, if each nurseryman or gardener on discovering any trace of the disease will immediately burn all the affected bushes. But it cannot be hoped that this will be done throughout the country; the smaller firms of nurserymen and many gardeners, who belong to no association or society, will receive no warning of the danger, and the disease spreading from infected imported plants will speedily invade the commercial Gooseberry plantations of our country, as it has done in Ireland and on the Continent. Legislation alone can deal with the danger at its source. The trade in standard Gooseberry bushes is unimportant and negligible in comparison with the interests connected with commercial plantations of Gooseberry bushes and their cultivation in private gardens, and the temporary prohibition of the importation of Ribes aureum, as well as the European Gooseberry, is necessary.

I am still investigating the subject of the importation of Ribes aureum and standard Gooseberry bushes, and trying to ascertain exactly to what extent diseased plants have been sent over from the Continent. So far, the results obtained allow one to hope that but little disease has been imported up to the present, and with the whole winter before us to work in—for the fungus will remain dormant until next spring—there is still every reason to believe that the pest may be successfully fought if the necessary assistance be given by the authorities. But the fact must not be lost sight of that until preventive legislative measures are taken, diseased bushes will in all probability continue to be imported from Continental nurseries.

The facts show us that we are now at the very beginning of an outbreak of the disease in this country. The authorities have waited until the disease has appeared, although they were warned on the first outbreaks of the disease in Ireland and on the Continent in 1900-1905 that the disease must invade England if nothing were done. So far, perhaps, our commercial plantations are still free from the disease; the authorities have one more chance—and the last.

In my article last week I enumerated the protective measures which, in my opinion, should be taken at once. In view of the fact that the disease flourishes on R. aureum, and on standards on this stock, and that diseased standards have already been imported, it is most important that we should, in the first place, exclude further danger from this source by the temporary prohibition of the importation of R. aureum; and, secondly, that the work of extirpating the disease, wherever it has found its way into nurseries, should be proceeded with energetically.

I have examples of the mildew (poisoned, and therefore harmless) which I should be pleased to lend for educational purposes to any nurserymen's or fruit-growers' association, or to send to any private individual. A description, with illustrations, of the fungus will be found in my articles in the *Journal of the Royal Horticultural Society* (vols. xxv. and xxvii.). Any Gooseberry shoots suspected of being diseased can be sent to me for inspection. *E. S. Salmon, F.L.S., Hon. F.R.H.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUMS AT WARRINGTON.

It may be that many Southerners who know the chemicalised atmosphere of Runcorn and its vicinity will smile and say, "I should think there are none by now"; but if they will go to Wilderspool, just south of the town, they will be agreeably surprised both by the plants and the welcome extended to them by their owner, William Bolton, Esq., the popular Mayor of Warrington for probably the fourth year in succession.

To compare the growth of the Orchids here now, as compared to what it was three years ago, is to compare immensity to nothing, so great has the improvement become under the management of Mr. Bolton and his energetic chief, Mr. Kain. Natural conditions are here seen to be of the utmost value, and artificiality of any sort is taken the least advantage of in this establishment. The houses, and heating apparatus, are of the simplest kind, and the result is eminently good. I must admit that I was surprised at the great change in the plants.

There is one cardinal difference now as compared to then, and this will appear to be a contradiction of my statement regarding artificiality; it is that most of the plants then hanging on the glass roofs, even the Odontoglossums, are all standing on the stages, these being lower than in any establishment I have seen. Speaking of all the plants generally, I may say they are growing like weeds, and particularising, I wish to commend the details of the Odontoglossum growing to the careful consideration of all who specialise in this genus, which has now "par excellence" become the most highly valued of all genera of Orchids.

Wilderspool is somewhat peculiarly situated; the south end of the garden borders on the Manchester Canal, and to the north a short distance is the River Mersey. Readers must judge whether exhalations from these two well-known "pure water" ways have aught to do with the growth of the plants that are so happy in this flat place; for if they have, that is the only kind of "*loading*" they get, for no two men can be more "down on" manuring Orchids than are Mr. Bolton and Mr. Kain, who give the plants nothing but rain water, unless they have to put up with waterworks water for a short space now and then.

The Odontoglossum houses are somewhat unique, as the following description will prove. You enter a central corridor 70 feet long by 4 feet wide and 9 feet high, which runs north and south. Running east and west of it are four pairs of span roof houses 50 feet long, 12 feet wide, and 8 feet high to the ridge inside, separated by spaces of 3 feet; the ends are all free, there being no doors in them. At the end of the corridor there is one house which is equal to one of the pairs, having no door opposite the end of the corridor.

The ventilation of these houses is remarkable,

for at first sight there appears to be none at all, as there are *only* top lights *nor* side wall ventilators to open at all. The ventilation is gained by a few panes of glass being open at the ends and the use of *only two* doors from the corridor into the spaces between the houses, but there are no doors from the corridor into the houses themselves to control the admission of air if the "space" doors are opened. These "space" doors do not allow of much ventilation, being only two, one on each side of the corridor, not opposite each other, but if opened for any cause, of course, there is an inlet of air, but this is not the usual course practised for ventilating purposes.

FIG. 127.—WASHINGTONIA SONORAE (PALM), YUCCA ELEGANTISSIMA, TRELEASIANA, ETC. (For text see page 319.)

The heating is also remarkable, being one 8-inch pipe under each side stage, a thing I have never before seen in any Orchid-growing establishment. The stages are 3 feet 9 inches wide and only 2 feet from the ground, which has nothing of any sort on it; it is bare, to exhale anything which Nature may have put into it or drain off the water from the stages.

The plants stand directly on the slate stages, which are covered 1 to 2 inches deep in cinders crushed to the size of large peas or beans. The side walls of the house are 3 feet high, and are 1 foot above the stage level. From that height the roof runs to the ridge. The shading is one ordinary lath blind, and the hot water has this year been in disuse from May to the end of September. Tanks, as usual, are under the stages, and small iron cisterns placed along the paths to dip the can into complete this most successful group of houses.

The potting compost used is Oak leaves and sphagnum in equal parts; the leaves are gathered in autumn from the woods and kept in the open under a little shed; they are used after rubbing through a half-inch sieve. To this mixture is added about one-sixth silver sand, and into that goes the plant with no drainage of either crocks or rhizomes.

Out of that compost come plants that are as good as man can wish for, and into the pot go the roots in great quantity and in quality, such as no man can wish for better.

There are some 80,000 Odontoglossums, and in some of the houses are a few of the old rockwork still hanging up on the roof in the moss (above) that used to be the order of the day then. You do not need to look at them more than once to see the benefit of the new treatment, under which they are all going the same way, viz., from little plants into big ones.

The largest crispums and "luteos" are a sight to see, immense growths coming up everywhere and double breaks in quantity. To particularise them would be a positive labour; I measured one luteo-purpureum growth of 2¼ inches wide at base and 18 inches high, and the bulb had only just begun to form. Of these there are 30 plants in 8 to 12-inch pots, a couple of which have three heads. Large crispum plants are here by hundreds.

Mention must be made of the fine varieties as well as the fine growths, and among the crispums are Capartianum, Massangeanum, Mariæ, Lucieni, Lindeni, Raymond Crawshay, punctatum violaceum, Queen Victoria, Jeannette, Starlight, and Queen of the Earth. Fine Adrianæs are numerous, as also are Wilckeanums, including Stevensii, under its second name of crispum Alpha (kept on it to mark its origin).

Garden hybrids are seen by the hundred, and rapid propagation of these is being practised, for it is found that they are in increasing demand annually, and Mr. Bolton is not afraid of their value falling to "bed-rock level" as some people fear they will. Of course, as is well known, these garden hybrids grow themselves, but they do not always succeed in dividing themselves, so that each plant makes two of the same size, as will shortly be the case here.

The change in the quality of the growth is one of the most remarkable things I have seen in Orchid culture in so short a time, and if it continues upon its present lines (I see no reason why it should not) Wilderspool will be one of the sights of the North.

Passing on to Cattleyas and Lælias, here the same remark applies, rampant growth all round, in species and hybrids alike. All those usually grown are to be seen here, as well as many fine forms of each.

It is not my usual custom to dilate upon a Cypripedium, but I must give a note respecting them whilst here. It is a well-known fact that the insigne and bellatulum sections do well at Wilderspool, but perhaps it is not known how well. The question is, could they do better? Of insigne Sanderæ there are some 500 plants, many dozens of them being in 8 to 10-inch pots, and with a dozen growths or more. They grow like Tradescantia, under a damp stage, and it is no trouble to propagate them as fast as may be desired. When in bloom this house will be an extraordinary sight indeed, and well worth a journey to see them alone. C. Fairieanum is here in hundreds, and at present seems to like a coolish treatment, but sufficient time has not yet elapsed to prove its needs; and varieties of this "long lost" plant will now be rapidly forthcoming, and doubtless the "albino" variety will in due time appear. *De B. Crawshay.*

FIG. 128.—WASHINGTONIA ROBUSTA, AGAVE MEXICANA, FRANSONIANA, HAYNII, MULTIFLORA, VICTORIA REGINA, YUCCA VOMERINSIS &c., ETC. (For text see page 319.)

FIG. 129.—AGAVE SCHIDIGERA IN FLOWER TO THE LEFT, OPUNTIA MAXIMA, O. CAMANCHICA, IN THE CENTRE, PILOCEREUS SENILIS TO THE RIGHT, TOGETHER WITH AGAVE COCCINEA, ATROVIRENS, YUCCA ROSTRATA, WHIPPLEI, GLAUCA, ETC.

FOREIGN CORRESPONDENCE.

A GARDEN NEAR MOUNT VESUVIUS.

ONE of the few amateurs and lovers of plants in the vicinity of Naples is Mr. Gennaro Casertano, of San Giorgio à Cremano, who has in his splendid garden a fine collection of the choicest open air plants. Two years ago the first trees and shrubs were planted, and they are in as good a state as Mount Vesuvius has permitted. We can plant here only small young trees which become acclimatised in this arid volcanic soil; very many were lost this spring, when the ashes rose to a depth of 20 to 25 centimetres (8 to 10 inches). All the small shrubs and perennials planted during the winter and before the eruption died in consequence of the acid fumes, and the roots were baked; but the love of flowers never dies, and now the owner is beginning to replace his losses. Succulents and Palms are his favourites. All plants which do here in the open we have in larger or smaller specimens—Washingtonia filifera, robusta, Sonorae, and the new W. Purpusii. Of W. Sonorae there are six large seven-year-old plants doing very well. W. Sonorae is a nobler and more elegant Palm than robusta (fig. 127). Of the other Palms, Erythea or Brahea Roezlii has silvery leaves, but it is a very slow grower. Jubaea spectabilis is also one of the finest Palms when in good condition. There are two good specimens here of Phoenix—a very large collection of species, one with an enormous trunk. Among small plants is the very rare Nannorhops Ritchieana, which grows very slowly. Of Cocos australis there is a fine specimen. Cordyline indivisa, Sprenger's Hybrid Yuccas, and Strelitzia Regina are to be met with, and among the border plants are new varieties of hybrid Gazanias. In the spring and summer during the flowering time the effect is delightful. The lawn is composed of Lippia repens or Zapania repens, one of the best creeping plants for hot and dry places; during the summer it is covered with very pretty pinkish flowers. It is impossible to grow grass satisfactorily. The other photos show rockeries of lava from lava thrown up in 1872. Between these rocks are planted succulents, Yucca, Phormium, and Washingtonia Sonorae. In the spring bulbous plants—Tulips, a complete collection of the fine wild Italian Tulips; Fransoniana, neglecta praecox, Didieri, Sommieri, and others; Iris Susiana and other Oncocyclus varieties, and many other plants. In the summer Helianthemums, Arctotis, Statice, Gypsophila, Thymes, and other rock plants do well, and during the summer they are never watered except from the sky. You can distinguish Agave mexicana, A. Franzosiniana, stenophylla, atrovirens, multiflora (fig. 128), and the noble A. Victoria Reginae; Aloe vulgaris. Many of the little rock plants were damaged by the ashes, but are now replaced, and next season will do well. Another succulent group is composed also of Agaves, but the specialities are a complete collection of Yuccas, the true species including valida, macrocarpa, baccata, rigida, rostrata, Whipplei, and glauca. Fine specimens of Pilocereus senilis and Dautwitzii are only planted out during the fine season; during the winter they are kept in a small house containing succulents, including Phyllocactus and Epiphyllum and other Cactaceæ. The large Opuntia is maxima; of this there are a great many sorts. These two succulents between the rocks excite the admiration of all the visitors (fig. 129). Conifers are also present in many species; Pinus halepensis, Laricio var. calabrica, maritima, insignis, one of the finest and fastest growers; canariensis, with leaves that are blue in the spring; Montezumæ, Strobus, Sabiniana, Massoniana, and others. Cupressus macrocarpa, a very fast grower, has shot up in two years to a height of more than 2 metres; pygmaea, guadeloupensis, Cedrus, a fine collection of Abies, including sibirica, Pinsapo, nobilis, lasiocarpa, pungens glauca and Kosteriana. The last two planted in the spring have not suffered from the fall of ashes, and we may hope that they will do well; and also Abies balsamea, Menziesii, Biota, Sciadopitys, Cryptomeria elegans, Podocarpus, and others. Bamboos are also grown in large quantities. Especially fine are B. mitis (edulis), Thamnocalamus Falconeri, Bambusa nitida, B. Alphonse Karr, heterocycla, and others planted two years ago. As to trees and shrubs, there are Salix Safsaf, a large specimen with weeping

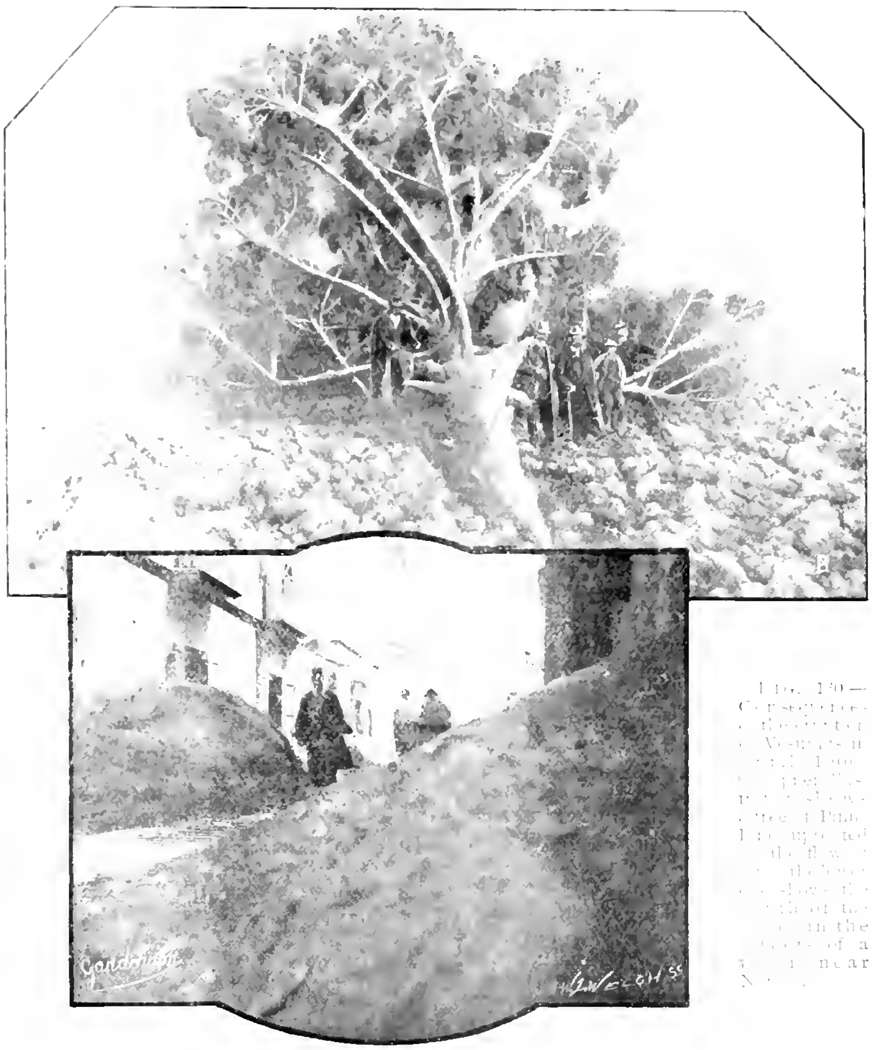


FIG. 130.—Consequences of the eruption of Vesuvius [illegible] in the [illegible] of a [illegible] near N[illegible]

branches: Acacias, Amelanchier asiatica, Japanese Oaks, dentata, serrata, and the laurel-like evergreen glauca and laevigata. The first is a very fine tree, especially in spring; the young shoots are very bright red. Japanese Cherries have flowered well, as have all the Japanese shrubs. Tamarix hispida aestivalis, Desmodium tiliaefolium, Buddleia Veitchiana are in flower the whole summer and autumn. Lippia asperifolia and the new Vitex Negundo and varieties, Indigofera atropurpurea, Dosua, and Bungeana are the best summer shrubs. Of perennials there is a good border, with Gerberas in large clumps, Romneya, Campanulas, Gaillardias, Michaelmas Daisies, and others. But never is the border so fine as are those representatives which I see sometimes illustrated in your columns, for here the flowering time is different to that in the north, and we plant more annuals for the sake of an effect. I hope to send you next year other photos of our plants if Mount Vesuvius will permit me to do so. *William Muller.* [Other photographs sent us by Mr. Sprenger show the depth of the ashes in the streets of the town, and a tree of Pinus Pinea uprooted by the lava. The tree served as the turning point to the flow of lava.—ED.]

COLONIAL NOTE.

PRETORIA.

I was glad to see Mr. Brown recently calling attention to Haplocarpha scaposa in the *Gardeners' Chronicle*. It is a beautiful plant, but is so common here in Pretoria that it is usually ignored. In the Transvaal it is widely distributed, growing in heavy, black, clay-loam in "vleis," *i.e.*, alluvial valley lands which become almost boggy in our summer rains, but dry out completely in winter. During winter the plant remains quite dormant in the dry soil, not even a leaf is to be seen.

Spring flowers are now coming out. Cyrtanthi, Vellozias, pink Indigoferas, yellow Gnidia, blue Pentanisia, and gay Liliaceae and Amaryllids of many sorts. The Aloes are over, and so are the Scarlet Erythrinas, which have made the kopjes so showy during the latter part of the winter, but the beautiful white Dombeya densiflora still persists.

Remarkably good rains have fallen generally over the Transvaal, and we are looking forward to a good agricultural season at last, after three years of such drought as appears to have been almost unknown before. *J. Burtt-Davy, Pretoria, October.*

NOTES FROM AN UNDERCLIFF GARDEN.

LAST year I contributed notes to this journal on the very interesting garden at Belvedere, St. Lawrence, Isle of Wight, the residence of Mrs. M. Gwytherne-Williams, and this year I was fortunate in being able to again visit it towards the end of June. The garden, which faces south, overlooking the blue waters of the English Channel, and entirely protected on the north by the high cliffs immediately behind, was a blaze of colour with Mesembryanthemums which grow and flower as well here as they do at the Isles of Scilly and at Abbotsbury. Numbers of succulents, growing in the fissures of the outcrops of rock that here and there broke the surface of the soil, showed evidence of being perfectly at home, and I noticed amongst others Aloe arborea, A. serra, Agave Victoria Reginae, Aporocactus flagelliformis, Cereus jamacaru, C. peruvianus, C. phoeniceus, C. flagelliformis, C. Lamprochlorus, Echinocereus viridiflorus, in flower, Echinopsis Eyresii, in bloom, E. multiplex, E. Pentlandi, Maximiliana, E. Zuccariniana, in flower, Gasteria verrucosa, blooming, Haworthia cuspidata, Mamillaria centricirrha, M. mussoniana, Opuntia humilis, O. cylindrica, O. Salmiana, O. arborescens, O. glauca, in bud, O. microdasys, O. monacantha, O. Rafinesquii, O. xanthostema rosea and Sempervivum anomalum. In another portion of the garden were a fine flowering plant of Kniphofia Northiae and a small specimen of Yucca elephantipes, said to attain a height of 40 feet. Among the shrubs and plants in bloom were Abutilon vitifolium, Andibertia grandiflora, Chorizema Lowii, Bouvardia triphylla, a sheet of scarlet, Bletia hyacinthina, Brodiaea laxa, Cestrum elegans, Buddleia Colvilei, Eriostemon densifolium, Convolvulus mauritanicus, Cypella Herberti, Cinerarias that had been out three years a mass of bloom, Dyckya longiflora, Gazania nivea, Gilia pungens, Gerbera Jamesoni, Ixias, Jamesia americana, Libonia floribunda, growing in front of a rock, Megacaryon orientale, Ornithogalum arabicum, Ozothamnus rosmarinifolius, Pimelea Hendersoni, bearing pink flowers, Pancratium illyricum with numbers of self-sown seedlings springing up around the parent plants, Rhabdothamnus Solandri, with red flowers, Rehmannia angulata, Salpichroa rhomboidea, Sphaeralcea Munroana, covering a space 10 feet square, and a sheet of soft red blossom, Solanum crispum, S. aviculare, Lavatera assurgentiflora, Sparmannia africana Sutherlandia frutescens, scarlet with bloom, Senecio sagittifolia, Trichonema Clusiana, Tritonia crocata, and the South African Tulbaghia violacea. Anacampseros rubens was in bud, as was the rare South African Bowkeria triphylla, the largest specimen of which was 12 feet in height. The fine Salvia dichroa, from the Atlas mountains, was past its best. A little later Limoniastrum Guyonianum, from the neighbourhood of Biskra, flowered, as did Fuchsia syringaeflora, from Mexico, of which there is a fine specimen. Cantua dependens flowered well earlier in the year. Lagunaria Patersoni, a rare shrub from Norfolk Island, which bears large white flowers about 3 inches across, with petals very firm in texture, as in a Camellia, of which there is a specimen 7 feet in height, covered with buds and Albuca Nelsoni was showing bloom. In July Kunzea pedunculatis, 5 feet in height, bore its bottle-brush-like flowers. Among other noteworthy plants were Aberia caffra, Acantholimon venustum, Agathosma rugosa, Aristaea Ecklonis, and the allied Witsenia corymbosa, the Chilian Aristotelia Maqui, Asparagus Sprengeri, perfectly happy in the open, Buddleia asiatica, Calophaca Wolgarica, the red-flowered climber Camptosema rubicundum, from Brazil, Callitris cupressoides, Castanopsis chrysophylla, Callistemon salignus, C. lanceolata, Chironia ixilera, the rare Crossosoma californicum, Daphniphyllum himalayense, several species of Dianella, from Australia, Dioclea glycinoides, Diosma vulgaris var. gracilis, Diospyros costata, Drimys Winteri, Distylium racemosum, bearing scarlet flowers, Echium simplex, Feijoa Sellowiana, Freylinia cestroides, 5 feet in height, which has not as yet flowered, Gordonia lasianthus, Hakea eucalyptoides, H. suaveolens, 8 feet in height, the South African Honeysuckle, Halleria lucida, Hovenia dulcis, Illicium religiosum, Incarvillea compacta, I. variabilis, I. Olgae, Jaborosa integrifolia, Kalosanthes coccinea, Lotonia modesta, Lycium europaeum, the Cape Silver Tree, Leucadendron argenteum, a small specimen, Leptodermis lanceolata, Melhosma myrrantha, Myrsine semiserrata, Origanum sipylenm, Osteomeles anthyllidifolia, Ostryopsis Davidiana [?], 6 feet in height, a shrub bearing yellow flowers like those of an Hypericum, as large as florins, at the extreme end of the branches before the leaves expand, very rare, Pterocarya sorbifolia, Plumbago capensis, Reevesia thyrsoidea, Rhododendron Dalhousiae, the new Sophora flavescens, Strophanthus capensis, Ungnadia speciosa, and Westringia rosmarinifolia. Even in Cornwall the collection of rare and tender plants named would be hard to beat, but there is probably but little difference between the climate in the southern part of that county and along the Undercliff, and certainly the excellent health of the great majority of the specimens indicates that they are perfectly happy in their surroundings. The attractions of the garden are much heightened by a clear stream that runs through its entire length. In a shady spot, hard by a little fall, a plant of the Elk's-horn Fern, Platycerium alcicorne, has been out four years and is doing well, and not far distant a fine specimen of Cypripedium insigne, generally cultivated under glass, grows and flowers freely. Lower down the garden the Table Mountain Orchid, Disa grandiflora, is planted in a moist spot by the stream-side, though as yet it is too early to say if this enterprising attempt—probably the first to grow the Disa in the open air in England—is likely to succeed. Cape bulbs thrive splendidly in this garden, Freesias propagating themselves by self-sown seed, and Sparaxis, Babianas, Ixias, Tritonias, Brunsvigias, hybrid Hippeastrums, Ismenes, and Cyrtanthi finding a congenial home, while in the early autumn the Nerines flower profusely. In the spring a gently sloping bank is covered with flowers of Cyclamen persicum. In these notes probably not a quarter of the plants grown in this interesting garden are specified, for they are merely intended as supplementary to the article that appeared on July 15th, 1905. *S. W. Fitzherbert.*

KEW NOTES.

THE VICTORIA REGIA AT KEW.

AFTER comparative failure at Kew for a number of years, this plant is again flourishing in the Royal gardens. At the time of writing (September 16), it has eleven fully-developed leaves, and numerous younger ones, in various stages of development. The largest leaf is 7 feet 2 inches in diameter, and the up-turned margin is more than 5 inches in height. In most of the fully-developed leaves, the diameter varies from 6 feet 3 inches to 7 feet. In addition to the foliage, numerous flowers are present in all stages of growth, from tiny buds to those fully opened.

For several years past, shortly after the young plants were placed in the large water-tank in House No. 1, they were attacked by a disease. The first appearance of the disease was the presence on the leaf of numerous small patches of a dull green colour, and these formed into holes and in a few days spread in all directions, until the whole of the leaf was more or less decayed. The young leaves were first attacked when they were about half developed, and when once the fungus was inside the tissue, it spread with great rapidity.

On submitting specimens to Mr. Massee, he reported that "the disease was due to a parasitic fungus called Pythium de Baryanum, and that the aquatic habitat and high temperature of the surroundings proved highly favourable to the development of the fungus by the asexual mode of reproduction, innumerable zoosporangia being produced, also large quantities of gonidia that closely resembled oogonia, but differed in being asexual and in germinating at once. These oospores were subjected to various tests with solutions of permanganate of potash (Condy's fluid), by which it was proved that a three per cent. solution caused their death." However, as the tank in which the Lily was grown also contained a number of other aquatic and bog plants, and numerous gold fish, caution in the use of this chemical was necessary. The tank was therefore impregnated with solutions of varying strength of the permanganate, and, in addition, the leaves of the Lily were sponged almost daily with a strong solution of the same substance. These efforts resulted in checking the disease to a considerable extent, and the plant improved somewhat, but the approach of

winter put an end to the experiment. It was thought from these results that little difficulty would be experienced in keeping the young plant free from the disease the following season, but, to the dismay of everyone concerned, it appeared the next year during the month of May with renewed vigour, and, in spite of every precaution, greatly disfigured the plant. Every means were taken to again check the disease. The same process of the previous season's treatment with Condy's fluid was again gone through, and the temperature of the water and of the atmosphere was raised and after a time lowered, but, in spite of all precautions, the disease continued to manifest itself. For three years this failure continued, until, in the spring of the present year, it was determined to place the new plant in the tank in House No. 15 (which was originally built for accommodating the Victoria regia), and to transfer the Nymphæas to the Victoria tank. The result has been entirely successful; the Victoria regia was never finer at Kew than at present, while the Nymphæas have also proved a success in their new quarters, and are apparently immune to the attacks of the Pythium.

I append a few notes on the culture of the Victoria regia. The plant is raised annually from seeds, which soon lose their vitality if allowed to remain dry for any great length of time. The seed are therefore best kept in small bottles of water. They should be sown singly in small pots in February or March, and be plunged in a tank, the water of which is heated to a temperature of 80° F., at which degree of warmth the young plants thrive best in their early stages. The young seedlings appear in a few days, and in the course of a week or more will be ready for a shift into a 6-inch pan and again into a 12-inch pan in another fortnight or three weeks. In this last pan it should remain until ready for transplanting into its permanent quarters, which should consist of a large tank, preferably a circular one, provided with a set of hot-water pipes sufficient to maintain the temperature of the water to about 80°. A good supply of clean water is a necessity, as is also an efficient overflow. At Kew the overflow goes to replenish a large pond near by, and hence serves a double purpose. The depth in the centre of the tank should be 4 feet, gradually sloping upwards towards the sides, which need not be more than 2 feet in depth. In the centre of the tank, provision must be made for a large bed of soil in which to grow the Lily. This may be made by building a wall of turves in the form of a circle or square to a height of 3 feet, with a diameter of at least 5 feet, and filling in the middle with good turfy loam mixed with about one-third its bulk of cow manure. It it is intended to permanently occupy the tank with this Lily, it is preferable to build a brick wall as a receptacle in which to hold the soil, the sides being perforated with holes at regular intervals in order to allow a free access of the water on all sides. If built to a height of 3 feet, this height will allow a foot of water above the crown of the plant, and this quantity is ample.

The young Victoria regias should be planted about the middle of May, and for the first few days the temperature of the water should be kept at about 80°, when it may, with advantage, be gradually lowered to 70° or thereabouts. I mention this because at Kew we found the plant this summer thrived best when kept at this temperature, and the water, even on hot days, has rarely been above 72°.

As the Victoria is a sun-loving plant, it should receive all the light possible. The best house for their culture is a span-roofed structure, fitted with both top and side ventilators and with glass sides to within 3 feet of the ground level, the bottom being of brickwork. The atmospheric temperature during the growing season should not be allowed to fall below 70° during the night time, rising to 80° by day, and, with sun heat, to 90°. A maximum amount of ventilation is essential during the hot summer months. *C. P. Ragill.*

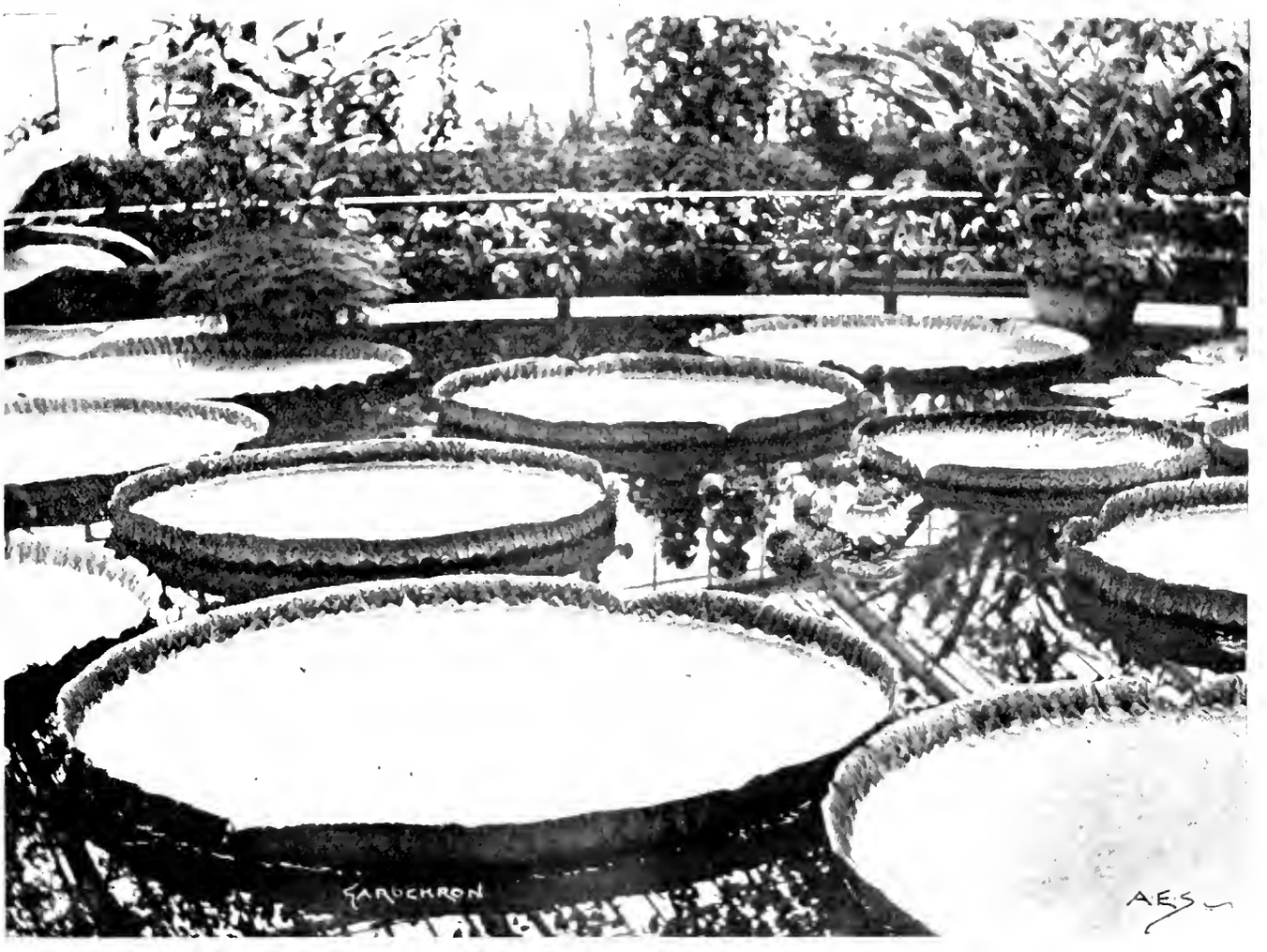


FIG. 131.—THE VICTORIA REGIA FLOWERING IN THE OLD NYMPHÆA-HOUSE AT KEW.

FUNKIA LANCIFOLIA VAR. TARDIFLORA.

It is now about 10 years since Herr Max Leichtlin, of Baden-Baden, sent specimens of this Funkia to Kew. The plant differs in a variety of characters from the type species. Its time of flowering is October, while that of F. lancifolia is July, and its leaves have a more leathery appearance than the latter, and the petioles are shorter, giving the plant a compact appearance. The light purple or lilac flowers are more numerous, averaging from 20 to 30 on each raceme, while on very vigorous racemes there are sometimes as many as 40.

For growing in a small bed in the pleasure grounds, as a patch on the front of the herbaceous border, or as an edging to a shrubbery border, the plant is equally useful. Moreover, it thrives well, for at the present time the plants in a small round bed near the Victoria Gate (always a dry position, and especially so during the past summer) are covered with racemes of flowers, although in close proximity to an Oak tree.

Propagation is effected by division of the roots, but if flowering plants are desired the following year the operation must not be severe.

This plant is sometimes employed as a pot plant for the cool greenhouse, where it will flower at a season when greenhouse flowers are none too plentiful.

PLANT NOTES.

MARANTAS.

THERE are some 30 or 40 varieties of this beautiful and easily-managed, moisture-loving stove genus in cultivation at the present time, as compared with the half-dozen varieties to be met with in English hothouses some 30 years ago, and which consisted, among others, of M. zebrina, M. regalis, and M. lineata rosea. The plants are generally of moderate growth, and are propagated easily by division of the crowns. The divisions should be potted singly into 3-inch or 4½-inch pots, according to the size of the portions. The pots should be provided with ample drainage, and the potting medium should consist of good fibrous peat, with a liberal sprinkling of silver sand added, this being made moderately firm in potting. Afford water to settle the soil about the roots, and shade the plants from sunshine for a few hours during the heat of the day until the roots have pushed into the new soil, when the shading can be dispensed with. The Maranta will succeed under the conditions of atmospheric moisture and temperature usually afforded to ordinary stove plants, namely, a minimum night temperature of from 55 to 60 degrees, according as the weather is cold or warm, during the winter months, with a rise of 5 degrees in the springtime, allowing the thermometer to register 5 degrees higher during the summer and early autumn months, rising 10 degrees to 15 degrees with sunshine (when opportunity offers) during the first three months in the year. The plants should be syringed lightly overhead with clean, tepid water in the afternoons of bright, sunny days. In April and the five following months a good growing atmosphere should be maintained, and the plants and house generally should be well damped early on bright mornings, and again at closing time, which should range from 2.30 p.m. in March to 4.30 p.m. during July and August. When the thermometer registers from 75 degrees to 80 degrees in the morning fresh air should be admitted, afterwards increasing and decreasing the amount given, according to the rise and fall of the thermometer, until the ventilators are finally closed for the day.

The following brief list and description of the more useful varieties of the Maranta may prove useful to cultivators: M. argentea, leaves large, oblong, of a silvery-grey colour, and marked with narrow lines of green; M. fasciata, leaves 8 to 12 inches in length, ground colour bright green relieved by broad bands of white; M. illustris, leaves bright pea-green, streaked with deeper green, and blotched with white; M. illustris rosea-picta, leaves like those of the type, but marked with rose; M. lineata rosea, ovate-lanceolate, bright green leaves, with rose-coloured lines running from mid-rib to margin, the undersurface being purple; M. major is a plant of graceful habit, 2 to 3½ feet high, leaves 4 to 9 inches in length, of varying shades of green, a useful and effective decorative plant; M. regalis, having leaves of a dark olive-green ground, with pink stripes; M. Veitchii, with leaves over 1 foot in length and 6 inches in width, colour a rich glossy green, and marked on either side of the mid-rib with crescent-shaped blotches of yellowish green, purplish on the under side, a very handsome variety; M. vittata, with light green leaves marked with transverse bars of white; M. zebrina, an old and favourite species, the foliage of which is light velvety-green barred with purplish-green on the upper surface, dull purplish-green on the under surface. *H. H. W.*

NOTICES OF BOOKS.

GARTENKULTUR BODENHEIZUNG KLIMA-VERBESSERUNG (Horticulture, warming of the soil, and improvement of climate).

WE have received from the Forcing Gardeners' Company, at Grunewald, Berlin, a pamphlet of 13 pages dealing with a patented method of forwarding and protecting the growth of garden plants, both culinary and ornamental, the inventor of the system being Dr. H. Mehner. The idea of conveying warmth to the soil in which plants are growing is not new, trade and private gardeners in our own country, France, and Italy having had some methods of imparting warmth to Asparagus, Seakale, Rhubarb, vines, &c., for many years. The only novel point is the use of steam in underground drainpipes, in conjunction or otherwise with some kind of covering for the plants. It is a matter worthy of that attention of our cultivators who may be resident in the outskirts of manufacturing towns, where waste steam may be easily obtainable free of cost, or at a small rental. There are numerous crops mentioned by the author which can be forwarded to a great extent by the system, besides the few that are mentioned. Practically we have an extension of the spring at the beginning and protection from frosts, so injurious to early crops, up to the end of the month of May, as well as from the early autumn frosts, which often bring ruin to many kinds of vegetables and flowers whilst these are still in growth and beauty, as cultivators only too well know to their cost. The method is particularly applicable to early Carrots, Spinach, Kohlrabi, Peas, Beans, Lettuces, Endives, and Radishes, in early spring; to Cucumbers (out-of-doors sorts), Tomatos, and Cauliflowers; and in autumn and winter to Spinach, Parsley, Chives, potherbs, salads, Kohlrabi, and Cauliflowers. It is hoped by the inventor to carry out experiments with Lily of the Valley, Violets, Narcissus, Lilac, &c., on a large scale. As overhead protection and for side walls cheap sackcloth is recommended. There are likewise Strawberries, Roses, and many other kinds of plants which require protection in the spring; and in autumn Tomatos, late French Beans, Asters, Dahlias which can be protected from cold. What this would mean to the commercial gardener is very considerable in the matter of income. Appended are an outline plan of the system as arranged to be carried out at the Dahlem Horticultural School, and a table giving the names of varieties of various kinds of vegetables and flowering plants, times of sowing, and vegetation planting, taking the crops, vegetative warmth, growing warmth, and the kind of covering employed. There are striking illustrations from photographs of various crops on warmed and unwarmed plots of ground. The pamphlet is obtainable from the *Verlag der Treibgartnereigesellschaft, Grunewald-Berlin, Auerbach Strasse 10. F. M.*

The Week's Work.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Winter Spinach.—Keep the ground between the lines quite free from weeds. Winter Spinach seldom makes too much growth, and it requires all the care possible to maintain a regular supply. So far this season it has done well, but the advent of severe weather may alter matters, especially after so much rain, which has caused the growth to be very soft. New Zealand Spinach should always be grown as a substitute when the ordinary variety fails. The New Zealand type has a suspicion of bitterness, but this can be overcome in the cooking if care is taken.

Celery.—All but the latest batch should by this time have received its final earthing-up. There will be but little growth from now onward, and the third earthing-up will act as a protection from frosts. This last application of soil should be made quite smooth, and with sufficient dust that rains will run off quickly, otherwise an excessive rainfall might cause the plants to decay in the centre.

Mushrooms.—The crops from the fields being exhausted, the indoor crops will need attention if they are to yield a constant supply. Maintain a succession of beds as far as possible. After the recent heavy rains the horse droppings will not be in so good a condition for making the beds, unless the precaution was taken to collect them daily, which is the best practice at all times. Syringe the walls daily, especially when fire heat is employed, and maintain the atmospheric temperature at 57°, or at the most 60.

Asparagus will now force easily, either in heated frames from hotbeds, or grown on a bed in the Melon or Cucumber pit. Lift home-grown plants and rest them for a few days before forcing. All ripened growth on the open beds should be cut off and burned, and the beds cleaned and made neat for the winter. Many make a practice of heavily coating the beds with cow dung. This, I think, is the wrong time to apply such a top dressing, as the manurial properties would be much better made use of by the plants when in full growth during the summer. Such heavy dressings on heavy soil do more harm than good, and if any top-dressing be given at the present time, it should be of a lighter material, such as horse droppings and leaves, thus allowing the air to pass through it, and the beds in consequence will be kept warmer and the growth in spring commence earlier.

Onions in store.—Examine these frequently and remove any decaying bulbs. If they are stored thickly, turn them over and allow plenty of air to circulate continually amongst them.

Trenching.—The recent wet weather has put a stop to this work. It is a mistake to trench land in a state of soddenness, more especially if it is of a heavy nature, as the "spits" in spring harden like bricks, and are never so easily brought down into condition that affords a good rooting medium. When the soil and weather are suitable, get as much of this work carried out as possible at this season. There are many gardens where the young lads never get an opportunity of learning how to handle a spade. No finer chance can be given them of doing so than by allowing them to do a little trenching. It will show them the necessity for deep cultivation.

THE HARDY FRUIT GARDEN.

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

Peach and Nectarine Trees.—The planting of these trees should be proceeded with as fast as possible. The ground may not require draining. Most gardens are already well drained, and some sites do not require so much draining as others, but the matter should be given attention. The ground should be afforded some fresh loam, chopped up rather roughly. Employ all the fibrous portion for putting at the base, and use the finer soil for working in amongst the roots. The soil in which the trees are planted should be made good, for at least two feet deep. A few half-inch bones may be employed with advantage, but quickly decomposing manures should be avoided at the time of planting. If trees are to be planted against a wall, they may be put at distances of 18 feet, or, if preferred, one at every nine feet, alternate ones to be removed subsequently. In most gardens such young trees are very useful for removing indoors as occasion for them arises. Any transplanting needing to be done should be carried out at once, and if the roots were pruned last season, such trees will be likely to produce a good crop next year. When taking up trees of this kind the hole or trench should be made deep enough to enable the operator to work the tools right under the ball of roots, when it can be lifted out on a mat and taken away. After the process of planting, the ground should be firmly rammed about the roots for the purpose of inducing short-jointed and firm growth. Many lifted trees are ruined by being re-planted whilst dry, therefore, if the roots are in this condition let them be thoroughly soaked in water before planting is done.

Varieties.—The following varieties of peaches I have found to be satisfactory out-of-doors: Amsden June, Waterloo, Early Alexander, Hales Early, Goshawk, Grosse Mignonne, Dymond, Royal George (this is subject to mildew when grown in cold soils), Noblesse, Early Silver, Stirling Castle, Barrington, Thomas Rivers, and Sea Eagle. From these varieties Peaches can be gathered from the middle of July till the end of October. *Nectarines:* Cardinal, Lord Napier, River's Early, Violette Hative, Humboldt, Pine Apple, and in a good season, the fruits of Victoria are delicious, and of a fine colour.

Apricots.—These trees may be planted in rich loamy soil after the walls have been made good, as was advised on p. 259. Apricots require much care in lifting, but after they have been lifted several times, the operation is effected with much greater success, because such trees possess a good ball of fibrous roots. When grown in a cool house the trees should be moved every year. As much of the pruning as is possible should be done in the early stages of growth with thumb and finger, and so obviate the making of wounds with the pruning instrument. Some good varieties are Kaisha, Moor Park, Frogmore Early, Shipley's, and New Large Early. Apricot trees require more moisture than is sometimes afforded them. If the drainage

is in good condition one cannot easily apply too much water. The planting of Apricots should be encouraged, there having been a tendency to discard them because a tree sometimes has died occasionally, or lost some of its branches.

Strawberry Beds.—Old beds that have become very hard may be lightly pricked over with a fork to let in rain and air, but this should not be done deeply enough to destroy any roots.

Gooseberry Bushes may now be planted, and the necessary partial pruning effected. The ground should be made suitable by deep digging or trenching, and plenty of lime should be incorporated, especially if the soil contains much humus. Gooseberry bushes should have fairly long stems, so that the branches when loaded with fruits will not touch the ground. A neat and tidy plan on which to grow the best dessert varieties of Gooseberries is to train the stems up horizontal wires. In a short time the growths reach a goodly height, when they bear large crops on spurs. By this system of training, the fruits can be easily protected and gathered. Cordon-trained Gooseberries are very quick in giving a return, especially when they are trained to tall stakes. Place one stake in the centre and one at either corner of each square yard. Appended is a list of a few of the best varieties of Gooseberries:—Langley Beauty, Yellow Langley Gage, Yellow Champagne, Speedwell, Whinham's Industry, Whitesmith, Pitmaston Greengage, Crown Bob, Keepsake, Leader, Red Warrington, Levella, Trumpeter, Yellowsmith, and Dan's Mistake. Gooseberries are easily propagated from cuttings, and these can now be inserted.

THE ORCHID HOUSES.

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

Vandas.—Strong plants of the V. tricolor and suavis sections, from 4 feet to 6 feet in height, with fine healthy leaves down to the rim of the pot, are, whether in or out of bloom, always greatly admired. Owing to the unusually hot summer just passed, some of these plants may have lost more of their lower leaves than usual, and are showing a foot or more of bare stem. Those in this condition will require repotting, and this is the best season to do the work, as during the next few months the plants make roots more freely than at any other time of the year; and less foliage is likely to be lost than when the operation is done in spring or summer. When repotting, carefully remove the old potting and drainage material, healthy plants invariably have a number of living roots clinging to the sides of the pot, these roots should not be interfered with unless it is absolutely necessary. The base of the stem may then be cut off so far that when the plant is pressed down in the pot the lowest pair of leaves will be level with the rim, or a trifle above it. In some cases, where the specimen has roots that are firmly fixed to the sides of the pot, it may be necessary when lowering the plant, to ease a few off to prevent their destruction. Some of them may get cracked, but no harm will accrue if the work be carefully performed. Place a few large crocks at the bottom of the fresh pot for drainage, replace the lowermost roots, and work in amongst them some moderate-sized crocks, and rough, unchopped sphagnum-moss in about equal proportions. Press these materials down firmly, and distribute more roots in a like manner, filling up to within half an inch of the rim, and finishing off in cone-like fashion with a surface of clean and healthy sphagnum-moss. Any of the large, fleshy aerial roots that are long enough may be carefully pegged down on the surface of the moss, and these in time will make a number of roots which will enter the moss, &c. Such roots will help the plant to grow vigorously, and aid also in the retention of the lower leaves. Long, straggling roots may be tied in a downward direction toward the potting material, as they will then afford more nourishment to the plant than if left to ramble about in the air. Plants which have sufficient room for further development, and those that do not require cutting down, should have the surface material removed and be re-furnished with fresh sphagnum-moss, &c. After repotting or re-surfacing, afford water with a fine rose watering-can, in sufficient quantity only to keep the surface moss in a growing condition. These Vandas are not benefited by a dry atmosphere at any time, therefore it is advisable that they should be stood on some thorough moisture-holding material, and the spaces well syringed between the pots several times daily. The cooler end of the Cattleya-house is the best place for them, and after root disturbance they should be well shaded from all direct sunlight.

Habenaria multans, H. carnea, &c., and such plants are now passing from the flowering to the resting stage, and as the flowers fade the pots should be placed near to the roof glass in the warmest house, and in full sunlight. The amount of water at the root must be gradually lessened until the leaves and stems die down, and afterwards, through the resting season. Although the tubers are seemingly dormant, they must be given a little water occasionally, or they will shrivel and become useless.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Palms.—In the growing of Palms a common error made by cultivators is that of over potting. If the plants are grown in small pots and treated properly they may be kept as useful decorative subjects for a long time. Under ordinary circumstances Palms grow so easily that they are apt to be treated carelessly. When they have their pots well filled with roots, extreme care is necessary to maintain them in a healthy condition. Inattention to the application of water may cause the plants to suffer such a check that the leaves will assume a sickly appearance, and, on the contrary, if an excessive supply is given in the winter months, when plants absorb less moisture, much injury may occur by decay of the roots. The need for a little extra care in applying water to plants at this season of the year should not be overlooked. Palms are gross feeding plants, and to maintain that dark green, healthy condition of the foliage, we continue to afford stimulants through the whole season. These are varied and consist of the drainage from the cowshed, and soot-water used in a clear state; blood manure in a soluble state is highly beneficial, while Standen's manure is used at intervals throughout the season. The potting compost should consist of good turfy loam three parts, and Oak leaf-soil one part, with charcoal siftings and bone meal added. Pots measuring 6 or 7 inches in diameter are quite large enough for plants to be used for general decorative purposes. The white scale which is usually so troublesome may be destroyed entirely by spraying with X L insecticide, and if the liquid is applied at a temperature of 95° to 100° in cases where plants are badly infested, it will have good effect.

The Stove.—The atmospheric temperature should be reduced as low as is consistent with the health of the plants. If a mixed collection of plants is grown, the minimum given last month will still apply. The present is a favourable time to give stove plants a perfect cleansing, but any pruning or shortening back of misplaced shoots should be done first. Any plants which have become unsightly should be thrown out and their places filled with a healthy stock of small but growing plants. Clean the glass at short intervals so that all the light possible may reach the plants. Keep a watchful eye on all bulbous and tuberous-rooted plants which have died down. Such plants as Caladiums, Gloxinias and Achimenes must not be left in a cool house if even for a few days at this season of the year, but must be wintered in a heat equal to 58° or 60°.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to LT.-COL. SIR CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Pot Vines.—Where Grapes are required very early in the season, they should now be brought into the forcing house or pit, and if convenient the pots should be plunged in gentle bottom-heat provided by freshly gathered leaves, which will serve to stimulate the roots and cause the buds to break more freely. The bottom-heat should not exceed 70° for some considerable time to come. Carefully bend the rods down to a horizontal position to ensure that they will break into growth strongly at the base as well as at the top, and keep the atmospheric temperature at night at about 50° for the first fortnight or three weeks, allowing 5° rise during the day, with a further rise of 5° during sunshine. Close the house at midday, syringing the vine-rods, and damping down the walls and paths to cause the atmosphere to be moist. Change the air of the pit daily by opening the ventilators for a short time. In the early stages, and before the roots become fully active, much water must not be applied to the roots, but later, when they are making growth freely and new roots are pushing into the soil, liberal supplies are necessary to ensure success. It is advantageous to have the vine-rods fully 2 feet from the roof-glass if possible; a too close contact with the cold glass in winter during the early stages of forcing would be detrimental to them. The forcing of fruit trees during the last two months of the year requires much care and moderation. What little is done should be carried out in the day-time.

Early Vinery.—Where no vines are grown in pots, but Grapes are, nevertheless, required early in the season, let the permanent vines in the earliest house be pruned, and afterwards let the vines be washed down with a little soft soap and warm water, adding a little paraffin to it, but do not remove more bark from the rods than is really necessary. The variety Black Hambro is usually forced first. The shoots should be cut back to one and two eyes, preferring the former, if the wood is stout, well ripened and short-jointed. The result will be compact, well proportioned bunches, which are most serviceable. Thoroughly cleanse the house. If ripe Grapes are wanted during April or May, the house should be closed about the middle of the present month, and the atmospheric temperature regulated as advised for pot vines.

Late Melons.—When these are grown for very late use, and if they are not already ripe, they should be cut from the plants and placed on a shelf in a dry and warm atmosphere. Those that are ripe will keep much better if suspended in nets in the late vinery, as the fruit-room is not sufficiently ventilated at this time of the year to preserve them from decaying.

THE FLOWER GARDEN.

By H. or A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Climbers in conjunction with trees and shrubs.—The practice of covering trees and shrubs in the pleasure grounds and in the wild garden with suitable and appropriate climbing plants has become very popular of late years, and the results thus obtained are very beautiful and effective. Take, for instance, the picture of a Laburnum tree completely covered with climbing Wistaria sinensis. The flowering period of each is simultaneous, and the blending of their drooping panicles of golden and lilac coloured blooms provides a pleasing and delightful effect, which it would be difficult to excel. Again, imagine the sweet-scented Vitis (V. vulpina odoratissima), a vigorous grower, and never happier than when scrambling upward in any way, planted at the foot of a large tree, in time making its presence and whereabouts known from a long distance away while in flower by suffusing the air with its delectable odour. In planting climbing plants the usual method is to dig a hole near the trunk of the tree, avoiding the latter's roots as much as possible, and introduce fresh loam and manure. This is often the only way in which it can be done; but, where practicable, it is preferable to plant them on the outside of the tree, where the branches are nearest to the ground, training them over the intervening distance by means of a strong stake well fixed in the ground and firmly attached to the branch to prevent the latter swaying about. In a year or so the climber will have secured such a hold that the stake will be unnecessary. Rambling Roses are particularly suitable for this kind of work, and one of the prettiest and most effective ways a rambler can be used is to allow it to scramble through and over an unsightly shrub, or a dwarf tree, which, perhaps, of itself, has long ceased to be an object of attraction. Once a Rose becomes established in such a position all the care it requires afterwards consists in thinning out the oldest branches to make room for the younger wood. One can readily picture the glorious display made by a Rose such as Aimée Vibert, throwing out its long, pendulous streamers, profusely covered with those delightfully fragrant, white flowers, from a point of vantage gained at the expense of some unappreciated Holly or such-like tree or shrub. Other Roses equally suitable for this kind of decoration as Aimée Vibert, are Félicité-Perpetue, Claire Jacquier, The Dawson, Dundee Rambler, Alister Stella Gray, Madame d'Arblay, and Madame Alfred Carrière.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Nov. 10	Dutch Gard. Soc. meet.
MONDAY,	Nov. 12	Unit. Hort. Ben. & Prov. Soc. Com. meet. R.H.S. Hall.
TUESDAY	Nov. 13	Birmingham & Midland Counties Chrys. Sh. (3 days). South Shields & N. Counties Chrys. Sh. (2 days). Winchester Chrys. & Fruit Sh. (2 days). Highgate Chrys. Sh. at Alexandra Palace (3 days).
WEDNESDAY,	Nov. 14	Liverpool Chrys. & Fruit Sh. (2 days). Roy. Hort. Soc. Exh. Chester Paxton El. Sh. (2 days). Tonbridge Chrys. & Fruit Sh. (2 days).
THURSDAY,	Nov. 15	Edinburgh Chrys. Sh. (3 days). Weston-super-Mare Chrys. Exh. Linnean Soc. meet.
FRIDAY,	Nov. 16	Sheffield Chrys. Sh. (2 days). Bradford Chrys. Sh. (2 days). Bolton Hort. & Chrys. Sh. (2 days). Newport & Dist. Chrys. Sh.
SATURDAY,	Nov. 17	German Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty three Years at Chiswick.—44°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, November 7* (6 P.M.): Max. 55°, Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, November 8* (10 A.M.): Bar., 29·3, Temp., 53°, Weather—Much rain.

PROVINCES.—*Wednesday, November 7* (6 P.M.): Max. 52° St. Albans; Min. 45° Scarborough.

SALES FOR THE ENSUING WEEK.

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

MONDAY to FRIDAY
Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY AND WEDNESDAY
Surplus Nursery Stock at Woodside Nurseries, Thongsbridge, Huddersfield, by order of Messrs. S. Broadhead & Son, by Protheroe & Morris, at 11.30.

WEDNESDAY—
150,000 Fruit Trees, &c., at Perry Hill, Cobtree, near Rochester, by order of Messrs. W. Horne & Sons, by Protheroe & Morris, at 11.30.
Palms, Azaleas, Roses, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY—
1,502 cases Japanese Liliums and other Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris at 1.
Nursery Stock, at the Royal Gardens, Hampton Court, by order of Mr. J. Saxton, by Protheroe & Morris, at 12.

FRIDAY
Orchids in variety, at 67 & 68, Cheapside E.C., by Protheroe & Morris, at 1.45.

The Hungarian Water Lily.

For the opportunity of figuring this interesting Water Lily we are indebted to the Hon. Charles Rothschild, of Ashton-Wold, Oundle, who received the plant from Bishopsbad, Navygarad, Hungary. It is exceedingly like the Egyptian and African N. Lotus. The flowers have a calyx of four pale olive sepals marked with whitish veins, the petals being white, flushed with pale purplish rose on the outer surface; the anthers are yellow. All the Lotos section have the same arrangement of the air-canals in the leaf-stalk (namely, two large central canals side by side), which renders the members of the section easy of recognition even when not in flower. The flowers are very attractive, but their beauty by no means constitutes their only or even their chief interest. The plant, as we have said, is so like N. Lotus of Egypt, parts of India, and tropical Africa that many botanists consider it to be specifically identical. Others, basing their opinion chiefly on geographical considerations, acclaim it a distinct species under the name of N. thermalis, and the latest monographer of the genus, Mr. Conard,* points out some minute differences in the venation of the leaf.

The history of the plant is interesting. It was first made known to botanists by Waldstein and Kitaibel in 1802. Those authors give an excellent description and figure of the plant in their *Plant. Rar. Hungar.*, p. 13, tab. 15, in which also the peculiar arrangement of the air-canals is mentioned. It is described as growing in the warm springs at Peeze, where the water in April has a temperature of 25 deg. Réaumur (90 deg. Fahrenheit, 32 deg. C.), and also in other adjacent spots where the water is of a lower temperature (70 deg. Fahrenheit). Some of these springs contain sulphur, others do not; but the Water Lily flourishes in both. It flowers in April or in May, according to the temperature of the water. The tubers are said to be greedily eaten by pigs—memorandum, keep the swine out of the garden. Probably the pheasants and swans would be equally destructive! There are numerous specimens in the Kew herbarium from the classical locality, but dried specimens of Nymphæas are not very satisfactory. Amongst the specimens are some prepared by Mr. Fraser for Lord Aveb ury, showing the germination of the seedling, with the first leaves, small, linear, oblong, and entire, passing gradually into a sagittate stage, and ultimately into the orbicular, sinuate, sharply-toothed blade characteristic of the adult plant.

The questions to be solved are—What is the plant, and how did it get into the warm spring near Budapesth? To the first question the answer seems to be that it is practically identical with the N. Lotus of Egypt. If this be so, how did it get into Hungary? It is not found, so far as we know, in the intervening country. Was it separately evolved in harmony with the conditions offered by the warm springs? If so, from what species was it evolved? There is no means of answering that question; we can only say that such an explanation seems improbable.

Did the Turks introduce it, or were the seeds transported by some migratory bird? That seems not improbable, but there is no evidence to support either notion. Then comes the question whether in past aeons Nymphæa Lotus, still very widely spread, occupied a still wider area. Upon this latter point it may be interesting to cite in abstract what Conard has to say on the subject. He quotes a German writer, Staub, who thinks it is almost certainly a relic of preglacial vegetation, when the whole of Europe enjoyed a comparatively mild climate. When the plants of this period were driven back towards the Equator by colder conditions this one remained in the favourable temperature of the thermal springs. Along with it has continued a snail Melanopsis parcssi, very near of kin to M. costata of Egypt. According to Staub, the genus Melanopsis was common in Europe in the drift period, and he considers that the warm springs of Grosswardein are older than the drift. It is also notable that there were in recent geological times throughout Europe Water Lilies resembling the Lotus group, which may have been the ancestors alike of the Egyptian and of the Hungarian plants. There are the best reasons, therefore, for considering N. thermalis as truly native in its present habitat, and if we can believe that its specific characters were demarcated as early as the drift period and have not changed since, we must follow those botanists who make this name a synonym of N. Lotus.

Such are some of the profound speculations to which the Hungarian Lotos gives rise. If the case of this Water Lily stood alone, we might shrug our shoulders at the imaginative faculties of the speculators, but when the case is backed up by similar evidence furnished by the snail, it becomes evident that the views of the philosophers are at least entitled to respectful consideration. May those who look on the flower be duly impressed with the fact that there are other considerations besides its beauty which entitle it to our wonder and admiration.

* CONARD.—The Water Lilies, a monograph of the genus Nymphæa. Published by the Carnegie Institution of Washington, 1905. 8vo, coloured plates.

MR. WILSON PRESENTED WITH THE VEITCH MEMORIAL MEDAL.—The meeting of the Royal Horticultural Society on Tuesday last was, if somewhat smaller than usual, really of a brilliant character. The Orchids were superb, the collections of Ferns equally so, and the stove-plants of Messrs. VEITCH reminded one of the groups shown at the Ghent quinquennials. All this is recorded on another page in the ordinary course. Special interest was given to the afternoon general meeting, by the presentation, on behalf of the Veitch Memorial Trustees, of a medal to Mr. E. H. WILSON, as some public recognition of his invaluable services to Botany and Horticulture. The occasion was the more appropriate, as the lecturer was Mr WILSON himself. By the aid of numerous lantern slides, Mr. WILSON was enabled to give a concise summary of what is known of the botany of Central and Western China and of his own explorations in those regions. As we have been privileged to give in these pages full details of his wanderings, and as many of the novelties introduced by him have already been figured and described in these columns, we need only say that the lecture was of a very interesting character, and that the warmest good wishes for his further success in the new journey that he is about to undertake were expressed.

LINNEAN SOCIETY.—At a meeting to be held on Thursday, November 15, at 8 p.m., Mr. HORACE W. MONCKTON, Treasurer and Vice President, will give an account of his recent researches in Norway, illustrated by a series of lantern slides.

THE SELBORNE SOCIETY.—The current issue of *Nature Notes* announces that during the absence of Professor BOULGER in South America, the magazine will be edited by the honorary secretary, Mr. WILFRID MARK WEBB. All editorial communications should therefore be sent to his private address, Odstock, Hanwell, W. In the same number a prize is offered for the best collection of autumn fruits accompanied by descriptions showing what the specimens illustrate.

FLOWERS IN SEASON.—Messrs. CUTBUSH & SON send us fruits of Periploca græca in the shape of long slender pods like French Beans, but cylindrical and united at the tips. Messrs. CUTBUSH tell us the plant has fruited very freely out of doors this season.

THE JOINT RAILWAY AND PARLIAMENTARY COMMITTEE.—We are requested to publish the following note:—"On October 24, 1905, the first meeting of the above committee was held, when it was decided that something must be done at once to improve the facilities for the carriage of fruit and other perishable goods in this country. With this object in view it was considered that the only satisfactory means would be to draw up a Bill for Parliament which would cover all the grievances of the traders in perishable articles, and to obtain the necessary support to carry such a Bill through Parliament. The committee has now been at work for twelve months, and feels that it would be as well to publish some report of the business transacted. The committee has been able to obtain the fullest support from all branches of traders in perishable goods. Among the members of the committee are numbered the presidents of the National Fruit Growers' Federation, the Green Fruit Section of the London Chamber of Commerce, the National Federation of Meat Traders' Associations, the Central Markets Meat and Poultry Association, the Federation of Grocers' Associations, the Market Gardeners', Nurserymen, and Farmers' Association, the Horticultural Trades' Association, the Guernsey Growers' Association, the Jersey Growers' Association, the English Grape Growers' Association, and the National Federation of Fruit and Potato Trades Associations. After getting all the information possible bearing on the question, and obtaining numerous instances of unjust rates, delays in delivery, careless handling, &c., and tabulating them, a Bill was drafted which we believe covers all the points of grievance. Copies of this proposed Bill have been sent to the members of Parliament, and we have received in almost every case notes of approval and promises of support when the Bill comes before the House. Further, we have received several offers from members of Parliament to take up the Bill, but we are endeavouring to get it accepted as a Government measure if it can possibly be so arranged. As to monetary support, we have a guarantee fund at our back of considerable amount, but we would remind all those interested that the larger the total amount we have to call on, the greater the weight of the committee, and also the less we shall have to call for from each guarantor. Calls can only be made as to 10 per cent. of the amount guaranteed for the first call, and 5 per cent. at any future call, these calls being made at intervals of not less than two months; so that even on a good guarantee the amounts

FIG. 132.—NYMPHÆA THERMALIS (see page 324).

to be paid cannot come as a hardship to anyone. We have also waited on the Presidents of the Board of Trade and the Board of Agriculture, when the different interests were represented, and we are greatly encouraged by the reception accorded to us. As we are anxious to get the Government to take up the Bill, and having the promise of these influential members of the Government to look into any complaint sent them, we would strongly advise traders to accept the offer, and besides sending in a claim to the railway company to lodge a complaint with the managers, sending a duplicate to the Board of Trade and the Board of Agriculture. All communications respecting the committee to be addressed to HENRY W. GOODALL, secretary Joint Railway and Parliamentary Committee, Tavistock Hotel, Covent Garden, W.C."

THE WEATHER IN THE NORTH.—The weather experienced in Scotland for some considerable time past can be described in no better term than atrocious. October went out with general and heavy rain, and November came in with a flood. A widespread depression, which is slowly moving northwards, is the immediate cause of the east wind and the excessive rainfall. A change to a drier and clearer atmosphere would now be most welcome, for since the beginning of October there has been rain almost every day. The agriculturists on the high lying lands are suffering severely, many being doomed to look hopelessly on while the elements are causing disaster around them.

ROYAL MEDALS.—Among the recipients of the medals presented by the Royal Society with the concurrence of HIS MAJESTY, we notice Dr. DUKINFIELD SCOTT, who has done so much to elucidate the floras of past ages and to bring them into relation with existing vegetation, and Prof. HUGO DE VRIES, whose practical researches in morphology are of so much importance, and who has given an amount of significance to "sports" and "mutations" in plants which they were previously not thought to possess.

Publications Received.—Royal Botanic Gardens, Kew. *Bulletin of Miscellaneous Information.* Appendix IV., 1906. Contents: List of Staffs in Botanical Departments at Home, and in India and the Colonies.—*The Animal Friend.* June.—*Royal Botanic Gardens, Ceylon, Administration Reports, 1905.* Report of Dr. J. C. Willis, director. The work increases, and want of space is a great inconvenience. The gardens at Peradeniya have been enlarged and improved.—*Colombia, a Land of Great Possibilities.* By John Barrett, U.S. Minister to Colombia. A pamphlet intended to awaken greater interest in the Republic. The land is a large one, rich in resources and capable of development for the benefit of all concerned.—National Poultry Organisation Society (12, Hanover Square, London): *Report on the Poultry Industry in America.*—*Species of Crataegus found within twenty miles of Albany.* By C. S. Sargent and C. H. Peck.—U.S. Department of Agriculture, Bureau of Plant Industry. Bulletin No. 100. *Orchard Grass.* By R. A. Oakley.—Harvard University. *Bulletin of the Bussey Institution, Jamaica Plain, Boston.* Vol. III., Part 5. Contents: Field experiment to test phosphate, potash and nitrogen on fine sandy loam. By E. Hersey; and the use of bark-bread, by F. T. Dillingham. From the Cornell University Agricultural Experiment Station, Bulletins 231. *Report on the Forcing of Strawberries and on the Forcing of Tomatoes, Cucumbers and Melons.* By C. E. Hunn and John Craig. 233. *Two New Shade-tree Pests. Saw-fly Leaf-miners on European Elms and Alder.* By M. Slingerland. 234. *The Bronze Birch Borer.* An insect destroying the White Birch. 235. *Co-operative Spraying Experiments.* Both these by M. Slingerland. 236. *Blight Canker of Apple-trees.* By H. H. Whetzel. 237. *Alfalfa.* A report of progress made under the direction of Thomas F. Hunt. 239. *Some Diseases of Beans.* By H. H. Whetzel.—From the New Zealand Department of Agriculture. *Viticulture in New Zealand,* with special reference to American Vines. By Romeo Bragato. An endeavour to impress upon growers the necessity for replanting their vineyards upon a phylloxera-resisting basis now that the ravages of the dreaded pest are known in the country.—*Jamaica Bulletin of Miscellaneous Information,* October. Edited by William Fawcett. With notes on the cultivation of vegetables, Camphor, and Rubber.—*Reports on the Botanic and other Stations, Grenada, 1905-06.* A severe drought was experienced, but Mr. Buttenshaw records a satisfactory fight with the Black Blight fungus, and that the introduction of several interesting plants has improved the appearance of the gardens.

GARDENERS AND THE AGRICULTURAL LAWS.

(Concluded from page 312.)

[Readers are reminded that this article, commenced in our issue of last week, explains the privileges given to market-gardeners and farmers by the Agricultural Holdings Acts. At the present time nurserymen and seedsmen do not share these privileges, though efforts are now being made to get this anomaly rectified.]

ARBITRATION.

Any difference between landlord and tenant as to the amount and time or mode of payment of compensation for improvements is determined under the Special Acts by arbitration, and these Acts contain provisions with regard to assistance from the Board of Agriculture when necessary.

CONTRACTING OUT.

You cannot, even by agreement with your landlord, deprive yourself altogether of the benefits of the Special Acts; but it is always open to you at the end of your tenancy to agree with your landlord as to the amount, and mode, and time of payment of any compensation, instead of having the question referred to arbitration under the Acts. Moreover, you may, before carrying out any of the works mentioned in the foregoing list, enter into an agreement with your landlord, providing either for the payment to you of a fixed sum by way of compensation at the end of your tenancy, or for the ascertainment of the amount of compensation in some other manner than that which is provided by the Acts. It would appear, however, that in the case of improvements such as liming, marling, &c. (Nos. 18 to 23 in the above list), you would be entitled at the end of your tenancy, notwithstanding such an agreement, to have an arbitrator or arbitrators appointed to inquire into the question whether the agreement previously entered into was a fair and reasonable one, and if the arbitrator were to hold that it was not, the agreement would be set aside. But one is bound to admit that here again the Special Acts are not as clear as they might be.

EJECTMENT BY MORTGAGEE.

It may be convenient to mention here that, under an Act passed in 1890, a special privilege is given to market-gardeners, farmers, and small allotment holders, in cases where they might otherwise suffer damage through their landlord having mortgaged (*i.e.*, raised money upon) his interest in the land without having obtained from the person lending the money permission to let the land in those cases where such permission may be necessary. In former times the person lending the money could seize the land and turn out the tenant without warning or compensation: but now the person thus seizing the land must not only give the tenant six months' notice before turning him out, but must also give him the same compensation as he would have been entitled to recover from his landlord if there had been no such change of ownership.

FIXTURES AND BUILDINGS.

We have already seen the favourable position in which you are placed in being able to obtain compensation for improvements to the land, including drainage works and the erection of buildings; but suppose you put up certain valuable fixtures in such a manner that they must inevitably be looked upon as "landlord's fixtures" (see the article on "Garden Fixtures" in the *Gardeners' Chronicle* of September 29, 1906). Here, again, you have valuable rights against your landlord, as the Agricultural Holdings Acts provide that where, on or after January 1, 1884, a tenant affixes to his holding any engine, machinery, fencing, or other fixture (even if it would otherwise be deemed a landlord's fixture), or erects any building for which he would not otherwise be entitled to obtain compensation, then such engine, machinery, fencing, or other fixture, or building, shall be the property of, and be removable by the tenant before or within a reasonable time after the termination of the tenancy.

There are, however, certain conditions affixed to this very valuable concession to market-gardeners jointly with farmers, and it will pay you to bear them in mind, viz.:—

(1) The provision does not apply where you have put up a fixture or building on account of being under some special obligation or promise to do so, or if you have only put it up in place of some other fixture or building which belonged to your landlord.

(2) Before removing the fixture or building you must pay all rent owing by you and satisfy your other obligations to your landlord under your lease or tenancy agreement.

(3) You must effect the removal before or within a reasonable time after the expiration of your tenancy.

(4) In the removal of the fixture or building you must not do any avoidable damage to any other building or any other part of the holding.

(5) Immediately after the removal of the fixture or building in question you must make good all damage done to any other building or other part of the holding where such damage has been occasioned by such removal.

(6) You must not remove any fixture or building without giving one month's previous notice in writing to your landlord of your intention to effect such removal.

(7) At any time before the expiration of such one month's notice the landlord has the option to purchase the fixture or building which you have informed him you propose to remove. If your landlord wishes to exercise this option of purchase he must give you written notice that he intends to purchase the fixture or building in question, and thereupon you will be entitled to receive what would be the fair value of such fixture or building according to what it would be worth to an incoming tenant.

Unless, therefore, before the expiration of your month's notice your landlord gives you notice of his intention to buy the fixtures or building in question, you are at liberty to remove it on the above conditions. On the other hand, if your landlord wishes to buy it, he is entitled to do so provided he pays you its fair value. If there is any dispute between you and your landlord as to what is the fair value of the fixture or building in question, then the amount has to be fixed by arbitration in the special manner provided by the Special Acts.

Readers should remember that these privileges are in addition to, and not in substitution for, the ordinary common law right of a market-gardener to remove fixtures set up for the purpose of his business (such as glasshouses), which was discussed in the previous article referred to above.

Even now we have not yet come to the end of your special advantages.

LANDLORD'S RIGHT OF DISTRESS.

You have a special privilege, even if you should get into arrears with your rent, as under these Special Acts the ordinary rights of the landlord to distrain are considerably cut down. For instance, your landlord cannot distrain for rent which became due more than a year before the date when the distress is made, although, in the case of a tenancy of ordinary dwelling-houses, shops, &c., the landlord can distrain for six years' arrears. The only exception is that if it has been the custom between you and your landlord for your rent not to be paid till a quarter or half-year after it legally became due, then the landlord is able to distrain for a little more than a year's rent.

Of course, the Special Acts do not take away your landlord's right to bring an action against you in the courts to recover six years' arrears of rent, nor do they prevent him from seizing your goods by putting in the sheriff to levy execution after he has obtained judgment in the courts for the amount due. But legal proceedings in the courts take time, during which you may be able to get your rent together. Meanwhile, you are safe in the knowledge that, even if the landlord should distrain on your land, he cannot do so for more than one year's arrears (or a little over when the exception mentioned above applies), and that he will have to withdraw the distress on being paid one year's rent plus the costs of the distress.

Hired Machinery.

The Special Acts give protection to machinery hired by market-gardeners in the event of a distress by the landlord for rent in arrear.

Notice to Quit.

Lastly, market gardeners and farmers have a special privilege to themselves in being entitled to a whole year's notice to quit where they hold their land from year to year. Very likely you are aware that, in the case of ordinary yearly tenancies (such, for instance, as in the case of dwelling-houses, shops, etc.), if your landlord wishes to put an end to your tenancy and turn you out, he can do so (in the absence of any special agreement to the contrary) by giving you a half-year's notice, provided his notice expires (or runs out) on the last day of the current year of the tenancy (*i.e.*, on the corresponding day of the month on which your tenancy commenced). If, however, you are a yearly tenant of land (with or without buildings on it) which comes within the scope of the Special Acts as above explained, then these Acts provide that your landlord must give you a whole year's notice to quit, but you will lose this benefit if you choose to agree to take a shorter notice when you are arranging terms with your future landlord.

Allotments and Cottage Gardens.

In conclusion, the writer feels that, at the risk of appearing tedious, this article would scarcely be complete without some reference to an Act passed in the year 1887, which conferred special privileges on the tenants of allotments and cottage gardens. The Act defined an allotment as "any parcel of land of not more than two acres in extent held by a tenant under a landlord and cultivated as a garden or as a farm or partly as a garden and partly as a farm," and further defined a cottage-garden as "an allotment attached to a cottage."

This Act was no doubt intended primarily for the benefit of persons belonging to the labouring classes, but it is clear that its provisions would also apply to the tenant-occupier of any farm of less than two acres in extent. The question has also arisen as to whether seedsmen and market gardeners can claim the benefit of the Act in the case of holdings of less than two acres. As to seedsmen, the question has been answered in the negative by a decision of the High Court of Justice, and the wording of the judgments delivered in that case would seem to exclude market-gardeners as well. It is, however, open to doubt whether the judges intended their remarks to apply to the case of a man occupying a plot of land of less than two acres on which he grows fruit and vegetables for market *exclusively*. Such a person would undoubtedly be a market-gardener although on a small scale; and, notwithstanding certain expressions used in the course of the judgments which would seem to place him in the same category as a seedsman, it is possibly still arguable that such a person would be entitled to the benefit of the Act in question, except where it overlaps the Special Acts. In cases to which the Act applies the occupier will be entitled, at the end of his tenancy, to obtain from his landlord compensation in money for crops of all kinds growing upon the holding in the ordinary course of cultivation, including fruit, and also for labour expended and manure applied to the holding (since the taking of the last crop therefrom) in anticipation of the future crop, whether the tenant has obtained the landlord's consent to the work or not. Moreover, if he has taken the precaution of getting his landlord's previous consent in writing to the execution of the works, he will also be entitled to compensation in respect of the following matters, viz.: for the planting of fruit trees and fruit bushes, and for drains, outbuildings, pigstys, fowlhouses, and other structural improvements made by him. Contracting out of the Act is not allowed, as it is expressly provided that the compensation to which a tenant may be entitled under its provisions shall be payable "notwithstanding any agreement to the contrary." The above privileges belong to the tenant however short his tenancy may be. It would certainly be to the benefit of the small nurseryman, seedsman, and market-gardener if Parliament would expressly declare that this particular Act should apply to the trades in question, not in substitution for, but only in so far as they give additional benefits to, those conferred by the Special Acts.

Conclusion.

We have now discussed fairly fully the rights which, under the Special Acts, are enjoyed in common by market-gardeners and farmers, and which the writer earnestly hopes may also before long be equally shared by nurserymen and seedsmen. The subject of this article has, it is feared, necessarily been somewhat long and technical, but it is one which touches the pocket and affects the legal liability of the entire trade. For this reason it cannot safely be ignored.

As pointed out last week, the remedy now required to put nurserymen on an equal footing with market-gardeners is the insertion of a simple clause in two Bills now before Parliament, viz., the Land Tenure Bill and the Agricultural Holdings Acts Consolidation Bill. The latter Bill seeks to codify the Agricultural Laws, but there is serious reason to fear that pressure of other matters may prevent its becoming law for a long time to come. It is, therefore, most important that the clause proposed should be inserted in the Land Tenure Bill. This is not the place to discuss the merits or demerits of the Bill in question, but even its most vigorous opponent will surely admit that, in so far as it will confer special privileges on market-gardeners jointly with farmers, these privileges ought also to be extended to nurserymen and seedsmen as a matter of fair play. *H. Morgan Veitch.*

[A Step Forward.—In connection with the above article which was commenced in our last issue by Mr. H. Morgan Veitch, we are pleased to be able to announce that Lord Carrington, President of the Board of Agriculture and Fisheries, has, through his secretary, written to Mr. Veitch consenting to receive on Monday next, November 12, a deputation of the Horticultural Trades' Association, when the subjects dealt with in Mr. Veitch's article will be discussed.—Ed.]

HOME CORRESPONDENCE.

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

Willows.—Now that the planting season is approaching, it would be well for intending buyers of Willow "setts" to see that they are being supplied with the right kind, namely, Salix alba or "Close-barked Willow." This tree with careful planting should be ripe for cutting in 16 to 20 years, and as 12s. 6d. to 15s. per foot is easily obtainable for the timber, it should be a good investment. Of the other varieties, Salix Russelliana, or "Open-barked Willow," is only used by cricket-bat makers. This species matures as quickly as the Salix alba, but 4s. per foot is a good price for the timber. *D. Adams.*

Gardeners' Mutual Improvement Associations.—Mr Dean (p. 313) has quite needlessly dragged in the name of the Royal Horticultural Society into this discussion, but it does not help his case in the least. His references to the Fruit Committee are equally unfortunate. I wonder how many of his fellow members will thank him for calling them amateurs; out of the forty-three gentlemen whose names are on the list, at least forty have had a professional training, and are, or have been until recently, actively engaged in growing either fruits or vegetables, or both; in regard to the other three, two are unknown to me personally, and one I am not certain about. This proves that the committee is almost entirely composed of professional members. Let Mr Dean try how much information he can get gratis from a lawyer, and then explain why a gardener should have to teach his profession to all and sundry, and thus equal the folly of the man who sawed off the branch of a tree on which he was standing. Mr. Mills (page 313) jumps at a wrong conclusion, and then proceeds to argue from it. I write solely for the purpose of exchanging notes with other professional gardeners. If the paper falls into the hands of non-professional gardeners I cannot prevent it. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

——— It is acknowledged that many of the Mutual Improvement Societies are composed of amateurs as well as professional gardeners. A proper title for the federation will therefore be the "Federated Horticultural Mutual Improvement Societies." I would go further than this, and suggest that every individual society that admits amateurs to membership should amend its title if it at present uses without the prefix "Amateur," the word "Gardeners," substituting for this "Horticultural." Professional gardeners should see to it that the one term that alone distinguishes them from other folk is not, by their consent at any rate, brought into contempt by misapplication. Another thought arising out of the discussion is that seeing many of the debating societies are composite bodies, it is the more imperative that branches of the British Gardeners' Association should be established in as many districts as possible, that meetings may be held at which questions affecting the relationship of employers to their gardeners may be discussed, as well as many other similar questions, debate upon which would be quite out of place in the presence of amateurs. *A Member of the British Gardeners' Association.*

Fruit Exhibits at the Recent Show.—Mr. B. J. Mercer is not the only person who lost fruit at the Royal Horticultural Society's show. I was an exhibitor in three classes, and, like Mr. Mercer, was unable to be present to pack my fruit at the close of the show. I therefore arranged with one of the leading nursery firms to send a man to pack and return the exhibits as in previous years. Through an error on the part of the man sent, he omitted to pack and return two baskets of outdoor Grapes, one of Chasselas de Fontainebleau, which was awarded the first prize, and one of various sorts, not for competition. Inquiries were made on the following day, as soon as I found they were not returned with the other fruit, but all trace of them had gone: baskets, boxes to pack them in, and card with my own and my employer's names and award on. I quite understand the rules relating to exhibits, and the difficulties the officials of the Royal Horticultural Society have to contend with. *J. Potts, gardener to Ed. Ascherson, Esq., Potts Place, Charing.*

Holland Pippin Apple.—Will some of the many readers of the *Gardeners' Chronicle* send me fruit of what they know as Holland Pippin in England. There is a variety of Holland Pippin in the South of Ireland—a wonderful cider Apple—and I fancy that when Arthur Young visited this country at the end of the eighteenth century, it was this variety he saw at Drumholland Castle Gardens, when he mentions trees laden down with a crop the like he had never seen anywhere else in all his travels. I am trying to put the Apples of Ireland right, as I did the Daffodils and Tulips, and have been forming a collection for the last four or five years. I have some twenty-two sorts already. I should also like to see fruit of Grange, Forge and Golden Knob of Kent and Sussex. I shall be greatly obliged, and will willingly remit stamps for postage and trouble. There is an Apple in the South of Ireland called Quaker Russet, a long-shaped fruit, soft, and tasting like a Peach. The Holland Pippin, as we know it, is a flat-shaped, white fleshed, but yellow fruit full of juice, and ripening in October. The skin is speckled all over like Nelson's Codlin. It and Gibbons' Russet are very old favourites locally with Irish gentry. *Wm. Baylor Hartland, Ard Carra, Cork.*

Chrysanthemums and the "Rust" Fungus.—Two or three years back, when "rust" on Chrysanthemums was causing most growers much anxiety, I wrote to the *Gardeners' Chronicle* stating my opinion that the cause of this pest was the excessive amount of moisture in the air, especially towards the end of that summer. I must admit now, however, that this cannot have been the real cause, as after such a hot, dry summer as that of 1906, I have several out of my 80 varieties badly attacked with "rust," while the majority are quite free from it. Therefore it would appear that these sorts have taken the "rust" through being grown in too rich a compost. The constant feeding by various manures is unsuitable to some varieties. I cannot remember observing "rust" on any Chrysanthemums that have been planted out and grown in the kitchen garden. *A. J. Long.* [We have.—Ed.]

THE WHEAT CROP OF 1906.—In reading through the interesting report of the Rothamsted Wheat crop (see page 271), I was struck with the closing paragraph, which states: "The weight per bushel of grain is in all cases from 4 lb. to 5 lb. above the average weight." From this I gather that the average weight per bushel of Wheat in that neighbourhood is about 60 lb. Here the average weight is 62 lb. per bushel, showing how wheat varies in localities. With me this year it weighs 64½ lb. per bushel, with a crop of 48 bushels per acre. This is from land previously carrying two green crops—Swedes and Rape—both fed off with sheep, which is perhaps the best preparation for Wheat in this locality. *E. Molyneux, South Hants.*

THE PREVENTION OF CORRUPTION BILL.—I fail to see why the gardener should be branded as a dishonest man because he receives (secretly and corruptly) a little discount from seedsmen, when the same thing exists in almost every branch of business. The cook, the coachman, and the butler as a rule receive far more than the gardener from the tradesmen that supply goods to their different departments. Allow me to give just one instance of honesty and dishonesty, or, rather, dishonesty according to your correspondent's views. Some three years back, to be correct, our coachman went to town about a week after Christmas for his (?) Christmas boxes. The first place he called at was the coachbuilder's. The books were referred to, and work had been done to the amount of £35; the Christmas box he received was 35s. The next place visited was the corn-dealer's: here he received £1, that being 5s. for each horse; the shoeing forge 4s., or 1s. for each horse. At the saddler's the books were again referred to; the amount to come was 7s. 6d. These princely sums were Christmas boxes, therefore, perfectly legal, and honestly obtained. At the same time I called at a seed shop, as I had been asked to do by the traveller, and received 3s. 6d. discount on a few bulbs we had from them. Now, I suppose I came back from town that day a dishonest and degraded man, and should have hung my head in shame, having received discount off my employer's account. Now, I don't see why nurserymen and seedsmen shouldn't do as others do. If they must give discounts or presents, whichever they choose to call them—and they say they cannot do business without—why not keep them till Christmas, and call them Christmas boxes? I fancy, then, those stricken-conscience ones would feel no qualms about accepting a Christmas box, as the stigma of dishonesty would be removed, and if some kind-hearted nurseryman made his Christmas boxes more equal, and sent more to those poor gardeners of the low wage and small order, and less to those of the high wage and large order, I think it is quite likely we should hear of dissatisfaction at the small amount of the Christmas box. My object in writing is to point out that even Christmas boxes are regulated according to the amount of orders. Whilst at the same time I think it would be difficult to find the employer that would object to his servant receiving them, or consider them dishonest. *A. T., Birmingham.*

——Until the employer appreciates the service of a good and practical gardener, and treats and pays him accordingly, you will never prevent the gardener from receiving tips from tradesmen or friends of his employer (nor do I blame him). As a well-known nurseryman said to me: "It makes no difference to your employer if I give you a present. There is my catalogue and the prices: take them or leave them. If you take them I give you a present to do your best to keep up my good name." Some time ago I applied for a place as gardener where there were two under gardeners, a labourer at times, and a boy, also the help of the cowman. The cowman was paid £1 6s. per week, with a house, the labourer 6d. an hour, often making £1 13s. 6d. per week. I was asked what wages I wanted, and said £2 per week. The gentleman told me he could get 20 gardeners to-morrow at 30s. a week who would be pleased to come. Both the cowman and labourer were better paid than the gardener. The labourer had no responsibility whatever, but the gardener was supposed to look round at night to see all was right, and twice on a Sunday. I took the place at 35s. per week, and the discount I took, although I never asked for one in my life. My employer opened a letter addressed to me one day with a P.O. in it for 4s. from a well-known firm. That was the beginning of the end; there was never any more peace for me in that place. Now, if that gentleman had given me £2 per week, with instructions that no discount was to be taken, I should have carried out his wishes. But until there is a better understanding between the employer and employed I fancy most gardeners will look for their discount, and, as *A Scot* says, the bigger the place the better is the discount. *J. F.*

——I think it should be headed "Nurserymen and Seedsmen's" discounts. You are correct when you say "the dealers have matters in their own hands," and, as a gardener, I should like to see every catalogue of seeds that comes out this season headed, "No discounts are offered to gardeners." Mark the word offered. For years I have hated this practice, and think that the much-abused gardener is not answerable for it. [No.] Surely we are not such a low, greedy lot as some would have us believe. Gardeners have consciences as well as others; nurserymen have no monopoly of good ones. I know some gardeners who would not take it if it were not thrust upon them. In July, 1904, one firm's representative said we must have part of your bulb order if it costs us a case of the best whiskey made. A firm of good repute in the Midlands said I was one out of six or seven in 3,000 or 4,000 customers. *A. D.* says it is "gardeners'" discount. No, gardeners are not so bad: they do not ask for it. Their employers read the *Chronicle* too (and often pays for it, mine does), so do not make them doubt whether they have honest men, because doubt is worse than anything else. Why did not the British Gardeners' Society have a rule thus: no discounts accepted? I feel thankful I have not taken that which is offered. *R. G. O. F.* has had all the small amounts that it did not pay to return. Firms of repute do not offer it now to the writer: they give him satisfaction with their goods and better quality. *A Briton.* [Our correspondent sends us printed offers of discounts from certain Dutch firms, as well as from one English one. We believe that in future the recipient of a secret commission will run the risk of prosecution, whether the offer be made by a foreign or a British firm. Moreover, we have reason to believe, though we have at present no authority for making any definite statement, that an influential body of well-known nurserymen will publicly announce their intention of entirely discouraging the practice. Whilst these changes are taking place it will be for the employers to see to it that an adequate remuneration is offered to the gardener, who is now often grievously underpaid in comparison to the requirements demanded of, and the responsibilities imposed upon him.—ED.]

AN APPLE CENSUS.—I should like to see a census of Bush-tree Apples, but I quite agree with Mr. Molyneux that information should be given upon certain defined points. It would only be a waste of time and space to give a list of the best dessert and cooking varieties. This information can be gathered from any reliable fruit nurserymen's catalogue. In my opinion all who care to give their experience on this question must of necessity state what varieties succeed *best* with them, next come the locality, position of garden, character of soil and subsoil. Now I come to what I consider the most important point, "the determination of the hardiest varieties, and the one able to withstand, say, 10° of spring frost, or escape them by late flowering." I do think this is a great factor in successful fruit culture in our fickle climate, and during the nineteen years I have had charge of the gardens here, it has been frequently impressed upon me by bitter experience. Take this season for example. Apples generally are a good crop, but not with me; the chief cause for this arising from our position, wrong altogether, laying low in a valley, and with, on the average, 3° more of frost than experienced by my neighbours on the hills, who have all good crops. Now I come to my list which stood the test. Lady Sudeley, Worcester Pearmain, Juneating, Cellini, King of the Pippins, Old Nonpareil, Wyke House Russet, Lady Hemmiker, Lord Suffield, and Lane's Prince Albert. The following were mostly failures or carried only a few fruits: Cox's Orange, Ribston and Allington Pippins, Scarlet Pearmain, Scarlet Nonpareil, Gooseberry, Peasgood Nonsuch, Cox's Pomona, Annie Elizabeth, Brownlees and Rosemary Russets, Gloria Mundi, Kentish Fillbasket, Duke of Devonshire, Reinette du Canada, Bramley's Seedling, Newtown Wonder, Manx Codling, and Ecklinville Seedling. I may say that most of the above were spoilt before the bloom expanded, as in April we registered on the 14th, 11°; 19th, 11°; 23rd, 10°; 25th, 10°; 30th, 8°. No Pears or Plums were left except on walls where protected. *W. Peters, Gwyns Gardens, Leatherhead.*

SOUTH DEVON.—My Nerine Fothergilli major in the open have been very fine. I cut the last blooms a week ago. The Shamrock Pea (Parochetus communis) is very lovely now, and Crinums are still flowering. C. Moorei variegatum, said by Mr. Elwes to be the best of them, is just throwing up a flower-spike. *S. W. F.*

CARNATIONS WITH MANY NAMES.—If *New Yorker* had read the American trade papers last spring he would no doubt have noticed that Mr. H. Eichholz, of Waynesboro', U.S.A., offered for many weeks Mrs. W. T. Omwake as a deep pink sport of Enchantress slightly pencilled with a darker shade. So whoever exhibited a variety under the name of Mrs. Omwake had as much right in doing so as the introducer had in naming it. But as long as the societies permit mere sports of Carnations to be named otherwise than "white" Lawsen, "red" Lawsen, "white" Enchantress, "rose-pink" Enchantress, &c., there is sure to be a hopeless muddle. For if any variety has a tendency to sport it is most sure to sport in different localities at more or less the same time, and if everybody were to name his particular sport we might get ten names for the same variety. I have had at least 12 sports of Enchantress; two pure white, one clear rose-pink, and the rest more or less striped or pencilled. The white one has been named by one grower Iver White, the pencilled ones I have seen as W. T. Omwake, and Helen M. Gould, and no doubt we shall get a score or more new names for the Enchantress if our Carnation Society does not put a stop to the naming of sports. By the way, if our *New Yorker's* rose-pink Enchantress is not better than Mrs. Omwake, I don't think it should be called "rose-pink," as this colour should be a clean self and not marked in any way. *C. Engelmann, Saffron Walden.*

DESSERT APPLES AT THE FRUIT SHOW.—I should be very sorry if your correspondent *M.* assumed that I found fault with the judges because they, in the Allington Pippin class, placed the large fruits first. They had really no other option. What I animadverted upon was the incongruity seen in the Society's conditions that fruits of Blenheim Pippin should be of a specified size, whilst those of other varieties might be of any size. As I then mentioned, that limitation with respect to the dimensions of Blenheim Pippin is to be remedied, and next year we may see fruits of the biggest shown in the dessert class. Still I think some definition or model of what should be esteemed table and dessert size is desirable as a guide to judges. We are now discussing Apples solely. Pears can wait. The real point at issue is, may dessert Apples be of literally any size, or should they be subject to limitations? I regret to read of lost dishes at the Fruit Show. It is an old complaint. Helping a friend to collect his, I took care to secure every single dish first. It is those which disappear the soonest. *A. D.*

VARIATION IN GERBERA JAMESONI (see pp. 288, 314).—Much variety really exists in what is regarded as the typical G. Jamesoni. This is more noticeable in the size of the flower-head, the comparative breadth or the narrowness of the ray-florets, and more particularly in the colour of the latter. One of the largest and most brilliantly-coloured forms I have seen was in the garden of the late Rev. H. Ewbank, at Ryde. I believe I spoke of it to Mr. Ewbank at the time as of a vermilion-crimson shade, so very remarkable was it. The plant carried a score or so of its nearly 4½-inch-wide blossoms. But one could not apply these colours to the type Gerbera Jamesoni. Doubtless the species seeds very freely in the wild state, which explains much. *E. H. Jenkins.*

SOCIETIES.

ROYAL HORTICULTURAL.

(Concluded from p. iv. of Supplement.)

BOTANICAL CERTIFICATE.

Mormodes, Buccinator variety, from Sir TREVOR LAWRENCE, Bart. Flowers cream coloured, with a greenish hue.

Maxillaria nigrescens, from Miss E. WILLMOTT, Warley Place, Great Warley (gr. Mr. Gooch). Flowers dark red-purple.

CULTURAL COMMENDATION.

To Mr. G. G. Whitelegge (gr. to J. BRADSHAW, Esq.), for an immense specimen of Cattleya Mantini.

To Messrs. SANDER & SONS for Cymbidium Tracyanum magnificum with five spikes.

To Messrs. MCBEAN, Cooksbridge, for a noble specimen of Cattleya Bowringiana.

To Mr. W. H. White (gr. to Sir TREVOR LAWRANCE, Bart.), for a fine Angræcum distichum.

DIPLOMA AWARDS.

CATTLEYA LABIATA.—*1st Diploma:* C. I. Capt. J. F. Laycock, from Capt. LAYCOCK. *2nd Diploma:* C. I. Hector, from J. BRADSHAW, Esq.

C. LABIATA HYBRIDS.—*1st Diploma:* C. Fabia Bradshawiana, from J. BRADSHAW, Esq. *2nd Diploma:* C. Fabia, Fowler's variety, from J. GURNEY FOWLER, Esq.

SOPHRONITIS GRANDIFLORA HYBRIDS.—*1st Diploma:* Sophro-Cattleya eximia, from J. GURNEY FOWLER, Esq.

DENDROBIUM PHALÆNOPSIS.—*1st Diploma:* D. Phalænopsis Miss Louisa Dean, from G. F. MOORE, Esq.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (chairman), and Messrs. Jos. Cheal, S. Mortimer, A. Dean, W. Fyfe, W. Pope, Geo. Keif, H. J. Wright, J. Davis, G. Reynolds, J. Willard, J. Jaques, Chas. Foster, Owen Thomas, A. H. Pearson, and W. H. Divers.

Several seedling Apples were shown for awards, also some varieties as James Grieve and St. Edmund's Pippin, &c., that have been the subjects of recent correspondence in this journal.

A fruit of Doyenné du Comice Pear was shown by the ROYAL JERSEY AGRICULTURAL & HORTICULTURAL SOCIETY (gr. Mr. Saussey).

The Duke of RUTLAND, Belvoir Castle, Grantham (gr. Mr. Divers), showed about 60 varieties of Apples and nearly 40 of Pears. The exhibit was prettily decorated with sprays of Smilax and autumn-tinted leaves, while three tripods had bunches of Grapes hanging from their centres. Among the Apples, prominent dishes were those of James Grieve, Stone's Apple, Allington Pippin, Emperor Alexander, Peasgood's Nonsuch, Belle de Boskoop, and Mère de Ménage. Among the Pears was a fine basket of Beurré Clairgeau, the fruits being coloured to a high degree. (Hogg Memorial Medal).

Messrs. HUGH LOW & CO., Bush Hill, Enfield, N., about 50 varieties of Apples of well-known kinds. (Bronze Banksian Medal.)

Mr. H. J. DOVER, Bath Road, Langley, Bucks, showed half a dozen bunches of Muscat of Alexandria Grapes. (Bronze Banksian Medal.)

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed a collection of Capsicums. Great diversity was seen in the fruits, some of which were red-coloured, others being yellow. Some of the names, if correctly written, were very formidable, thus C. paradiesonialakii is the Tomato-shaped Capsicum, and C. Cseresznyealakii has Cherry-like berries. (Silver Banksian Medal—for the plants, not for the names.)

A. KINGSMILL, Esq., The Holt, Harrow Weald, showed the blue Grape Vitis heterophylla, and heavily-fruited sprays of Pernettya mucronata.

FIRST-CLASS CERTIFICATE.

Apple James Grieve.—This early-ripening dessert Apple was described in our last issue, p. 311, by Mr. W. H. DIVERS, Belvoir Castle Gardens, Grantham, who now exhibited very pretty, medium-sized fruits.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 25.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, Ritchie, Leemann, Thorp, Cowan, Stevens, Rogers, Ashton, Parker, Cypher, Williamson, Warburton, Upjohn, Smith, Weathers.

H. J. BROMILOW, Esq., Rainhill (gr. W. Morgan), exhibited Cypripedium × Editha and C. × Fulshawense, the latter receiving an Award of Merit.

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), exhibited a new hybrid Odontoglossum called "Elmor," the parents of which are O. Harryanacrispa × O. crispum (Award of Merit). Cypripedium × "Optima," the parentage of which was not recorded, also received an Award of Merit.

PHILIP SMITH, Esq., Ashton-on-Mersey, exhibited Cattleya × inversa, Haddon House variety, and a seedling, the parentage of which appeared to be Lælia præstans × L. Perrini.

H. LOW & CO., Enfield, exhibited a very fine new hybrid Cypripedium, the parents of which were C. insigne, Harefield Hall variety, × C. × nitens magnificum, "Balls' variety." This plant received a First Class Certificate. In habit it resembles the former parent very much, and, although a very fine acquisition, we hope to see it not quite so "squat" as when shown on this occasion. The same firm received an Award of Merit for Cypripedium × Charlesworthii nitens.

Messrs. CYPHER & SONS, Cheltenham, gained a First Class Certificate for a handsome and distinct form of Cattleya × Hardyana var. "Illuminator." Also an Award of Merit for a splendid form of Miltonia vexillaria var. Leopoldi superba.

A Silver-Gilt Medal was awarded to Messrs. CYPHER & SONS for a fine display of Orchids.

Messrs. KEELING & SONS, Bradford, were awarded a Bronze Medal for a group of Cypripediums.

Messrs. WRIGLEY, P. SMITH, MCLEOD, ALLEN, THOMPSON, and BROMILOW were accorded votes of thanks for contributions to the meeting. *W. H.*

PORTSMOUTH CHRYSANTHEMUM.

OCTOBER 31, NOVEMBER 1, 2.—The twentieth annual autumn exhibition of this society was held in the Town Hall, Portsmouth, on these dates, and was a distinct success, the entries being in excess of former exhibitions of the society. In previous years the leading class has been a combination of incurved and Japanese blooms in equal numbers, a class which was not at all satisfactory, and the committee this year substituted for it a County Class, offering a Challenge Cup and £5 as the premier prize for exhibitors in the county of Hants for thirty-six Japanese blooms in not fewer than eighteen varieties, but not to include more than two of any one variety. Four growers competed, the premier award being won by Mr. G. Hall (gr. to Lady ASHBURTON, Melchet Court, Romsey) for a heavy lot of fresh and well-staged blooms. Noticeable specimens were Bessie Godfrey, F. S. Vallis, Madame Rivol, Mrs. W. Knox, Mrs. Mileham, Reginald Vallis, Edith Smith, Mrs. A. T. Miller, Algernon Davis, and two seedlings of much promise. 2nd, Mr. Dawes (gr. to Mrs. OGILVIE, Rosecroft, Hambledon), with slightly irregular blooms, although the example of F. S. Vallis was very fine.

CUT BLOOMS.

OPEN CLASSES.

The premier class was for twenty-four Japanese Chrysanthemums in not fewer than eighteen varieties. Three exhibits were staged, and of these Mr. HALL again showed the best, and thus secured the leading position. He showed similar examples to those in the Cup Class. 2nd, Mr. G. Treagus (gr. to C. R. SHIPHAM, Esq., Bognor Road, Chichester).

In the class for twenty-four incurved Chrysanthemums in not fewer than sixteen varieties, and not more than two blooms of one variety, two competitors only were seen. Mr. W. G. ADAMS, The Strand, Southsea, was easily 1st with large and somewhat rough flowers, the best examples being C. H. Curtis, Buttercup, W. Biddle, and Ma Perfection. Mr. J. AGATE, the Nurseries, Havant, the remaining competitor, was awarded the 2nd prize.

Pompon Chrysanthemums, in twelve sprays, three blooms to a spray, and in not fewer than eight varieties, made an interesting class. Mr. H. SNOOK, 5, Fitzroy Street, Fratton, won easily with typical examples of W. Sabey, W. Westlake, and Toussaint Maurisot.

There was keen competition in a similar class for single Chrysanthemums, and a good display of these useful decorative flowers resulted. Mr. G. Ellwood (gr. to W. H. MYERS, Esq., Swanmore House, Bishop's Waltham) won the 1st prize with fine examples of Edith Pagram, Mary Richardson, Florence Robinson, and Mary Anderson.

GROUPS.

For a group of Chrysanthemums in pots, occupying a space of 60 square feet, £4 was offered as the principal prize. Mr. W. E. GILL, Florence Road, Portsmouth, won with dwarf plants that were carrying good blooms; 2nd, the VICTORIA PARKS COMMITTEE. A class was also provided for twelve plants of not fewer than eight varieties, with twelve or more blooms to a plant. This was intended to show the decorative value of the Chrysanthemum. Mr. G. LAMBERT, 17, Bognor Road, Chichester, was first with capital examples of Japanese varieties.

"Single-handed" gardeners and amateurs in Portsea Island had numerous classes provided for them. Cut blooms were well staged by Mr. ADAMS, Mr. GILL, and Mr. SNOOK.

A Silver Medal and a cash prize were offered for the best table decoration of Chrysanthemums and foliage occupying a space 6 feet by 4 feet. The competition was restricted to ladies. Among five contestants Mrs. COLSTON HALL, Warminster, was placed first with a table extremely lightly arranged; 2nd, Miss M. SNELLGROVE, Southampton. The schedule included classes for table plants, and these added much to the interest of the show, relieving the otherwise flat appearance of the tables. Messrs. W. TURNER & SONS, 14, Green Road, Southsea, was first with elegant Crotons; 2nd, Mr. ELLWOOD.

Fruit and vegetables were numerous and good. Mr. SHIPHAM staged the best black Grapes, and Mr. ELLWOOD the best Apples.

Mr. ELLWOOD won the Society's prize in the vegetable classes for nine dishes, and he also won Messrs. Sutton & Sons' prize for six, in both classes, staging fine examples.

Messrs. SUTTON & SONS, Reading, were awarded the Society's Gold Medal for an exceedingly fine collection of vegetables.

WINDSOR CHRYSANTHEMUM.

NOVEMBER 2.—The fifteenth annual autumn exhibition of this society was held in the Albert Institute on this date. The entries were, perhaps, not so numerous as in past years, but the quality of the exhibits left little to be desired. The arrangements were of the best character.

CUT BLOOMS.

The leading class was that for six varieties of Chrysanthemums arranged in vases, five blooms of each, Chrysanthemum foliage only to be employed. The premier award carried with it his Majesty the King's special challenge cup. Unfortunately, but one grower entered: his exhibit, however, was a magnificent one, and worthy the award made to it. Mr. T. Stevenson (gr. to E. MOCATTA, Esq., Addlestone) was the fortunate exhibitor. The blooms were large, solid, richly-coloured, and well staged. The varieties were Duchess of Sutherland, F. S. Vallis, Walter Jinks, Mrs. G. Mileham, Edith Smith, and Henry Perkins.

Eighteen Japanese blooms, distinct.—These were required to be arranged in a space measuring 5 feet by 3 feet, with other plants or foliage to illustrate the value of large blooms for decoration in combination with other subjects. Mr. H. Hearn (gr. to Mrs. GERALD GOODLAKE, The Fishery, Denham) was 1st with handsome blooms, moderately well arranged on a base of Adiantum Fern. Mr. C. Page (gr. to J. B. FORTESCUE, Esq., Dropmore) secured the 2nd prize with a better arrangement, but he had smaller flowers.

Twelve incurved and twelve Japanese, distinct.—Mr. H. Elkington (gr. to OWEN TUDOR, Esq., Old Windsor) staged the best collection, especially good being the incurved varieties. 2nd, Mr. PAGE, with somewhat smaller examples.

Mr. W. Jinks (gr. to L. J. DREW, Esq., Knowle Green) won in the class for twelve incurveds with good examples of popular varieties. 2nd Mr. G. Baskett (gr. to P. NELKE, Esq., Virginia Water).

Mr. STEVENSON, with blooms similar to those in the Cup Class, won in the class for twelve Japanese varieties; especially fine was Mrs. R. Hooper Pearson. 2nd, Mr. W. JINKS.

Six Japanese blooms of one variety.—This proved a strong class, the winner being Mr. H. ELKINGTON, with fairly good flowers of Bessie Godfrey. 2nd, Mr. W. JINKS, who staged his namesake in fairly good condition.

Six incurved blooms of one variety.—The best half-dozen were shown by Mr. BASKETT; 2nd, Mr. ELKINGTON.

An interesting class is that for twelve Chrysanthemums arranged with any natural foliage in a vase or basket. Mr. JINKS, with handsome examples arranged with suitable foliage, won easily. 2nd, Mr. ELKINGTON.

Single Chrysanthemums made an effective display. Mr. W. Cole (gr. to Mrs. E. B. FOSTER, Clewer Manor) won the 1st prize in the class for five sprays, each of six blooms, having a really good exhibit, amongst six competitors.

Groups of Chrysanthemums and foliage plants made an effective display at the sides of the building, four growers competing. The best was a good exhibit staged by Mr. W. Lane (gr. to Sir E. DURNING LAWRENCE, Ascot), who thus secured the Society's Challenge Cup offered in this class. 2nd, Mr. W. COLE.

BATTERSEA, CLAPHAM, AND WANDSWORTH AMATEUR CHRYSANTHEMUM AND HORTICULTURAL

NOVEMBER 2, 3.—This suburban society held its sixteenth annual exhibition on these dates in the Town Hall, Battersea. On former occasions there have generally been a few striking exhibits from professional gardeners, some of whom at present reside some little distance from Battersea; consequently their exhibits were grown under better conditions than obtain in London. At the recent show, if we except a few flowers brought from Roehampton, all those present were grown in Battersea or Wandsworth, and were exhibited by amateurs. The result was creditable to the cultivators, who must have exercised considerable skill and much perseverance.

The best group of Chrysanthemums in pots, arranged on a space of 8 feet by 5 feet, was exhibited by Mr. L. STRINGER, 67, Taybridge Road, Battersea; and the 1st prize for a smaller group was won by Mr. E. YARHAM, Junior. Other successful exhibitors were Mr. H. BOSWELL, H. G. MCLEAN, S. H. STREET, W. FORTH, W. COOPER, A. B. FREEMAN, W. J. KENT, W. H. WINNETT, G. GEALE, E. J. SLATON, J. GREEN, W. LAVENDER, and Mrs. W. STRINGER.

DERBY CHRYSANTHEMUM.

NOVEMBER 2, 3.—The annual exhibition of the above association was held on these dates. The show generally was a vast improvement on those of previous years, and proved the most successful exhibition, financially, in the history of the society. On the second day 4,000 school children visited the show, and an appropriate address on the cultivation of the Chrysanthemum was given by the Vice-Chairman, Mr. Seymour.

Among exhibits not for competition was a fine display of Chrysanthemums, Carnations, &c., from Messrs. CLIBRAN & SONS, Altrincham.

Rev. BURKSTON, Sutton Hall, filled a considerable space with a collection of Orchids.

Mr. J. KING, Derby, staged a collection of Crotons of fine quality, and kindly lent Palms and specimen trees to decorate the Hall.

Mr. A. Simeson (gr. to W. S. POWER, Esq., Littleover), who competed at Derby for the first time this year, proved a most successful exhibitor.

CUT BLOOMS

In the class for 18 incurved blooms four growers competed. Mr. A. SIMPSON won the first prize with a good display, though the blooms were somewhat lacking in finish. His most perfect specimens were two examples of Mrs. F. Judson. 2nd, Mr. J. Wood, Alvaston; 3rd, Mr. J. Evans (gr. to Miss WILMOT, Chaddesden Hall).

The class for 18 Japanese blooms brought the same number of entrants, and again Mr. A. SIMESON was first. He showed fine blooms of Mme. W. Rousseau, Mrs. J. Hardaway, H. Perkins, Duchess of Sutherland, and others.

Mr. SIMESON also led in the class for six vases containing 18 Japanese Chrysanthemums in six distinct varieties.

The best group of Chrysanthemums was also staged by Mr. SIMESON, whose fine quality blooms and taste in arrangement left nothing to be desired. 2nd, Mr. S. POTTER; 3rd, Mr. G. POTTER.

Mrs. NORMAN, Derby, showed the best bouquet of Chrysanthemums.

A class was provided for a table decorated with one epergne and not more than six specimen glasses. The best arranged table was that decorated by Mr. J. A. WARWICK, Alvaston.

Mr. G. BROWN, Aston Hall Gardens, showed the premier dozen plants suitable for table decoration.

Mr. TOMLINSON, in the members' classes, secured the N.C.S. Certificate for a bloom of Mrs. Knox, the premier flower in the members' classes. *F. Meakins.*

ROYAL HORTICULTURAL OF ABERDEEN.

NOVEMBER 3.—The annual meeting of this society was held in the Music Hall Buildings, Aberdeen, on the above date. There was a good attendance of the members, and Mr. Samuel Pope, Vice-Chairman of the Society, presided.

The annual report stated that the income for the past year has amounted to £470 1s. 11d., and the expenditure to £395 14s. 4d., leaving a surplus for the season of £74 7s. 7d.—a result which is especially encouraging when compared with the deficit last year of £77 12s. 11d.

The Chairman, in moving the adoption of the report and the balance-sheet, said the balance-sheet last year showed a loss and a debt balance against the Society of £5 10s. 1d. This result was largely due to the unfavourable weather on each of the days of the show, more especially on the Saturday, when the receipts were nearly £100 below the average. The directors had adopted a policy of economising, and they had managed to reduce the prize list by more than £20, and they had dispensed with such things as military bands and fireworks, with the result that the debit balance of £5 10s. 1d. and every other claim against the Society could be met.

Mr. Alexander Robson, seedsman, Aberdeen, in seconding the motion, congratulated the directors on their balance-sheet, and said that the result was most gratifying.

Lord Provost Sir Alexander Lyon was re-elected Hon. President, and the Hon. Vice-President and Hon. Directors were also re-elected, and Mr. Samuel Pope was also elected Hon. Vice-President.

Mr. Ogilvie, who has been Chairman for the past two years, wished now to retire, and Mr. J. G. Burnett, of Powis, was elected Chairman in his stead. Bailie Milne was appointed Vice-Chairman in the place of Mr. Pope. The Directors were elected, and Mr. J. B. Rennett, advocate, was re-appointed Secretary and Treasurer.

NATIONAL HORTICULTURAL SOCIETY OF FRANCE.

CHRYSANTHEMUM SHOW IN PARIS.

NOVEMBER 3-11. The autumn show of this Society, held in Paris, was opened in very unfavourable weather. The show is very large, the exhibitors being numerous and the exhibits very varied. Fruit, particularly Apples, Pears and Grapes, are seen in enormous quantities, and there are large displays of ornamental trees and shrubs, Orchids, Dahlias, Carnations, Primulas, Cyclamen, Begonias, and other seasonable flowers. Among Chrysanthemums one of the finest exhibits is that set up by Messrs. VILMORIN, ANDRIEUX & CO., who have also staged an immense collection of almost everything that the vegetable garden can possibly supply. Besides a charming little decorative group of Chrysanthemums at the entrance to the show, Messrs. VILMORIN, ANDRIEUX & CO. have also a collection of finely-grown plants in pots, some being bush-trained and with large specimen blooms, 20 or 30 on a plant. Among the trained plants we noticed Ville de Phenice, a large, spreading Japanese variety, with colour a deep rich golden yellow; Tokio, a curious and effective variety, with narrow, stiff florets, the colour being pale rosy pink—an excellent decorative variety and one much appreciated by the French growers for exhibition. Many of the varieties are quite unknown to the majority of English growers, but Mme. Ed. Roger, William Duckham, Mrs. R. Hooper Pearson, M. Chenon de Leché, Mme. Gustave Henry, Nivose, Mrs. W. Knox, Mrs. Barkley were a few of the best and most readily-recognised flowers.

M. AUG. NONIN has a fine group and also many novelties, as have also Messrs. VILMORIN. M. NONIN'S group is edged with a pretty pale yellow pompon, Gerbe d'Or, in pots. His best specimen blooms are Duchesse d'Orleans, a fine white, incurving Japanese variety, and one largely grown for the French florists' shops; Lt.-Colonel Ducroiset, a grand yellow Japanese bloom; Fusée, another fine yellow; Solange, a large greenish-white Japanese; Sapho; Souvenir de Lombez; Le Peyrou, a fine yellow, incurved variety; Lady Hopetoun. The group also embraces a collection of freely-flowered plants of Baron de Vinols, a decorative Japanese Chrysanthemum, with bright rosy-amaranth-tinted florets, together with several sports from the same variety.

M. MONTIGNY has novelties for 1906 in 130 new varieties. They are mostly medium-sized blooms, but the collection is an interesting one to those in search of novelties.

Some nicely-grown specimen plants, carefully trained and freely flowered, are staged by the ECOLE HORTICOLE ET PROFESSIONNELLE DU PLESSIS-PIQUET. Among the best examples we noticed Souvenir de Petite Amie, Mme. Gustave Henry, Mme. Ed. Roger, Charles Schwarz, and M. Massange de Louvrex.

M. LEON CAVRON, of Cherbourg, has curiosities in Chrysanthemum culture, for besides having a large number of specimen standard-trained plants, he has quite a number of grafted standards, each bearing many varieties of the various sections, large and small-flowered varieties being together on the same plants, and also incurved and Japanese types—curious, but not beautiful. M. CAVRON has also plants in pyramidal form, after the style of the Japanese training, which, although curious, are scarcely up to the best Japanese standard.

A very fine display is that shown by M. DUBUISSON FOUBERT. He has some gigantic flowers of such kinds as Princesse Bessarabade Brancovan, Mrs. Wm. Duckham, Pride of Madford, Mme. Paolo Radaelli, and Mrs. C. Harman Payne. In one vase are seven blooms of F. S. Vallis that surpass anything we have ever seen at a French show before, for they each measured from 44 to 48 centimetres in diameter—18-19 inches.

M. LAVEAU has a commendable exhibit. His flowers of Lt.-Colonel Ducroiset are of colossal size, and he has other good ones, including Sapho, Jean Calvat, Verge Montbumoise, a grand white variety, and Mlle. Pouzac, a variety of a peculiar shade of blush and buff.

Other exhibitors are M. DEFAULT, M. JULES CORTIN, MM. LEVEQUE ET FILS, M. LARUE, &c.

In cut blooms special mention must be made of Messrs. A. CORDONNIER ET FILS, of Bailleul. They have a fine collection of big Chrysanthemums, besides showing Grapes in grand form. Chief among their Chrysanthemums, considered from an exhibition standpoint only, are Mme. Vigneau, a large, spreading, Japanese bloom, having medium florets, curly at the tips, a compactly-built flower, colour pure white. Aug. Testier was another large flower of yellow and buff shades. President Loubet, an immense Japanese bloom, with very long florets, a big, spreading, white flower, slightly tinted. Ministre Morgeot is another very large variety, the pure golden-yellow flowers are spreading; President Viger, Mme. Gustave Henry, Henry Perkins, Extase, Mrs. C. Harman Payne, and W. R. Church are others shown by this exhibitor.

M. GEO. TRUFFAUT exhibits Roses and Chrysanthemums cultivated with the aid of his new manure, "Biogine."

In the section for seedlings is seen considerable competition. M. ERNEST CALVAT secures a Gold Medal for a fine collection of nearly 20 novelties. The best are M. Paul Randet, Mme. de la Rocheterie, S. A. Naceur Beg, President

Dubost, Carlo Knacht, Touring Club, and Algesiras.

The Marquis DE PINS also has many seedlings of new shades of colour. Among these we may mention Mme. Bougere, colour dull rose on a white; Comtesse Alice de Lancy, resembling Pallas: La Tonkinoise, Lydia, La Dame Blanche, and Quo Vadis.

M. ALFRED CHAUTIER is a raiser of Chrysanthemums not widely known to English growers, but he has sent out many varieties that are grown in France. He has a neat collection, grown in good style, but most of them are scarcely large enough to judge of their merits for English growers. Prefect Lepine, an orange-amber-coloured Japanese variety; Alphonse XIII.; St. Fereol, and Mme. Louis Tinchant, a large, pure white Japanese bloom, slightly tinted green in the centre of the flower, are the more promising in this group.

A very pretty variety, raised by M. LIGER-LIGNEAU, called Mme. Madeline Lenoble, of a bright, warm shade of rose, with centre shaded buff, is the only other seedling shown in the special class for new seedling Chrysanthemums, although many other novelties for 1906 are staged by Messrs. VILMORIN, M. NONIN, and others in their groups. *Paris, November 5.*

COMING POTATO SHOW.—A new feature will be included at the third annual show of the National Potato Society on December 13 and 14 at the Royal Horticultural Hall, Westminster. The Executive Committee has arranged for cooking competitions each day. These will serve the double purpose of demonstrating the cooking qualities of a number of leading varieties, and of showing the most efficient culinary methods. The Universal Cookery and Food Association is assisting in the arrangements, and is offering medals. The Society's medals will be awarded by the popular vote of the visitors.

CATALOGUES RECEIVED.

W. WELLS & Co., Merstham, Surrey—Chrysanthemums.
S. BIDE & SON, Alma Nurseries, Farnham, Surrey—Rose Queen of Spain.
W. & T. SAMSON, Kilmarnock, N.B.—Trees, Shrubs, Roses, Fruit Trees, &c.
E. P. DIXON & SONS, Ltd., Hull—Nursery list.
AMOS PERRY, Hardy Plant Farm, Enfield, Middlesex—Border and Rock-garden Plants, Trees and Shrubs, Roses, Fruit Trees, Wall Plants, &c.
HERD BROS., Penrith—Nursery Stock.
GUNN & SONS, Olton, near Birmingham—Perennial Phlox.
CLIBRANS, Altrincham—Chrysanthemums.
HOLLAND PLANT CO., Boskoop, Holland Nursery Stock, Roses, Azaleas, &c.
JAMES VEITCH & SONS, LTD., King's Road, Chelsea—Strawberries, Carnations and Picotees.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Another Wet and Damp Week.—During the past week the days have been rather warm for the time of the year, while the nights were, as a rule, cold. On the two coldest nights the thermometer exposed on the lawn showed 5° of frost. Both at 1 and 2 feet deep the ground is now 1° warmer than is seasonable. Rain fell on five days during the week, and to the total depth of an inch. Nearly the whole of that quantity has come through the bare soil percolation gauge, and more than half of it through the gauge on which short grass is growing. The sun shone on an average for 1¼ hours a day, or for about a quarter of an hour a day less than is usual at this season. On one day the wind was rather high, and during the windiest hour the mean velocity reached fifteen miles—direction west, but during the rest of the week calms and light airs prevailed. The average amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by one 1 per cent.

OCTOBER.

Remarkably warm, wet, and humid.—This was with one exception (1898) the warmest October I have recorded here in the last twenty years, and not even in October, 1898, was the temperature in the daytime as high. The highest reading in the thermometer screen was 70°, while the exposed thermometer at no time registered more than 6° of frost, both of which extreme temperatures are exceptionally high for the month. Rain fell on as many as twenty days, and to the aggregate depth of 5¾ inches, which is nearly twice the average rainfall for October. There were seventeen wet nights, but only eleven wet days. Twenty-one gallons of rainwater came through the bare soil percolation gauge during the month, or as much as in the whole of the previous eight months taken together. The sun shone on an average for three hours a day, or for about ten minutes a day less than is usual in October. The winds were, as a rule, light, in fact in no hour did the mean velocity exceed eleven miles. For 440 hours, or eighteen days, the direction of the wind was from some point between south and west, but for 26 hours, or only one day, from any point between north and east. The amount of moisture in the air at 3 p.m. was 3 per cent. in excess of the average—a very exceptional degree of dampness for October. *E. M., Berkhamsted, Nov. 7, 1906.*

MARKETS.

COVENT GARDEN, November 7.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Azalea Fielderi, per dozen bunches	3 0- 6 0
— mollis, per bunch	0 9- 1 0
Bouvardia, per doz. bunches	4 0- 6 0
Calla æthiopica, per dozen	2 6- 4 0
Camellias, white, per dozen	2 0- 3 0
Carnations, per dozen blooms, best American varieties	2 0- 4 0
— smaller, per doz bunches	1 0- 2 6
— Malmaisons	3 0- 8 0
Cattleyas, per doz. blooms	8 0-10 0
Centaurea cyanus, doz. bunches	1 0- 2 0
— sweet sorts	3 0- 4 0
Chrysanthemums, per doz. blooms	1 6- 4 0
— small blooms, per doz. bunches	2 0- 6 0
Dahlias, per dozen bunches	2 0- 3 0
Eucharis grandiflora, per doz. blooms	2 0- 3 0
Gardenias, per doz. blooms	1 6- 2 6
Gladiolus, various, per doz bnchs	9 0-12 0
— brenchleyensis, per doz. spikes	1 0- 2 0
Gypsophila elegans, per doz. bunches	2 0- 3 0
Heather, white, pr. doz. bunches	3 0- 6 0
— purple	2 0- 3 0
Hyacinth (Roman), p. dz. bunches	6 0- 9 0
Lilac, white, per bunch	3 0- 4 0
Lilium auratum	2 0- 3 0
— lancifolium, rubrum and album	2 0- 3 0
— longiflorum	3 0- 5 0
Lily of the Valley, p. dz. bunches	5 0- 8 0
— extra quality	9 0 12 0
Marguerites, white, p. dz. bunches	2 0- 3 0
— yellow, per dz. bunches	2 0- 3 0
Mignonette, per dz. bunches	2 0- 3 0
Narcissus, paper white, per doz. bunches	2 6- 3 0
— Soleil d'Or, per dozen bunches	4 0- 5 0
Odontoglossum crispum, per dozen blooms	2 6- 3 0
Pancratiums, doz. flS	2 0- 3 0
Pelargoniums, show, per doz. bunches	3 0- 5 0
— Zonal, double scarlet	3 0- 4 0
Primula (double white), dozen bunches	4 0- 6 0
Ranunculus, per dozen bunches	6 0- 9 0
Roses, 12 blooms, Niphetos	1 0- 2 0
— Bridesmaid	1 0- 1 6
— Kaiserin A. Victoria	1 6- 3 0
— Caroline Testout	1 6- 3 0
— C. Mermet	1 6- 2 6
— General Jacqueminot	1 0- 1 6
— in bunches, per dozen	4 0- 8 0
— Liberty	1 0- 2 0
— Mad. Chatenay	2 0- 4 0
— Mrs. J. Laing	1 0- 2 6
— from the open, various kinds, per dz. bnchs.	3 0- 5 0
Statice, p. dz. bchs.	4 0- 6 0
Stephanotis, per dozen trusses	4 0- 6 0
Stocks (double white) per doz. bunches	2 0- 4 0
Tuberoses, per dz. blooms	0 4- 0 6
Violets, per dozen bunches	1 6- 3 0
— Parma, p. bch.	2 0- 3 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Adiantum cuneatum, doz. bun.	4 0- 6 0
Ampelopsis leaves, p. dz. bunches	1 6- 2 0
Asparagus plumosus, long trails, per doz.	4 0- 8 0
— — medium, bunch	1 6- 2 0
— — short sprays per bunch	0 6- 0 9
— Sprengeri	0 6- 1 0
Berberis, p. bunch	2 0- 2 6
Croton leaves, per bunch	1 0- 1 6
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	1 0- 2 0
Ferns (French), dz. bunches	2 0- 4 0
Hardy foliage (various), per dozen bunches	2 0- 3 0
Hardy Grasses, per doz. bunches	2 0- 3 0
Ivy-leaves, bronze	1 6- 2 0
— long trails per bundle	1 0- 2 0
— short green, doz. bunches	2 0- 3 0
Moss, per gross	4 0- 5 0
Myrtle, per dozen bunches	2 0- 5 0
Pernettya, with berries, per bunch	0 4- 1 0
Smilax, p. dz. trails	2 0- 5 0

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

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldi, per dozen	4 0- 6 0
— larger	9 0 12 0
Araucaria excelsa, per dozen	12 0-30 0
Aspidistras, green, per dozen	18 0-30 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	6 0- 9 0
— Sprengeri, doz.	6 0- 8 0
— tenuissimus per dozen	8 0-10 0
Begonia Gloire de Lorraine, p. dz.	8 0-12 0
— Turnford Hall, per dozen	8 0-10 0
Bouvardias, per dz.	4 0- 6 0
Chrysanthemums, best, per doz.	12 0-24 0
— smaller, per doz.	5 0- 8 0
Clematis, per doz.	8 0- 9 0
— in flower	9 0-12 0
Cocos Weddelliana, per dozen	9 0-18 0
Coleus	3 0- 5 0
Crotons, per dozen	12 0-30 0
Cyclamen, per dz.	9 0-12 0
Cyperus alternifolius, dozen	4 0- 5 0
— laxus, per doz.	4 0- 5 0
Dracænas, per doz.	9 0-24 0
Erica caffra	9 0 12 0
— hyemalis, per dozen	12 0-15 0
— gracilis, per dozen	12 0-18 0
— rivalis	18 0 24 0
Euonymus, per dz.	4 0- 9 0
Ferns, in thumbs, per 100	7 0-10 0
— in small and large 60's	16 0-25 0
— in 48's, per dozen	4 0-10 0
— in 32's, per dozen	10 0-18 0
Ficus elastica, per dozen	8 0-12 0
— repens, per doz.	4 0- 6 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen	12 0-21 0
Latania borbonica, per dozen	12 0-18 0

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

	s.d. s.d.
Lilium longiflorum, per dz.	18 0-30 0
— lancifolium, per dozen	18 0-24 0
Lily of the Valley, per dozen	18 0-30 0
Marguerites, white, per dozen	6 0- 9 0
Pelargoniums, Zonals, pr. dz.	3 0- 5 0
Physalis Franchetti, each	1 6- 3 6
Roses, per dozen	12 0 18 0
Selaginella, dozen	4 0- 6 0
Solanum capsicastrum, per doz.	5 0- 8 0
Spiræa japonica, per dozen	8 0-12 0
Veronicas, per doz.	3 0- 6 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, Nova Scotian:	
— Gravensteins, per barrel	13 0 14 6
— Blenheims, per barrel	15 0 17 0
— Emperors, per barrel	14 0-15 0
— Kibstons, per barrel	12 6-14 6
— English, ½ bus.	2 0- 6 6
— English, per bushel (46 lbs. to 50 lbs.)	3 6-12 0
— Newtown Pippins, per case	8 6-14 6
Avocado Pears	9 0-12 0
Bananas, bunch:	
— West Indian, red	7 0 —
— No. 1	6 6 7 6
— No. 2	6 0 6 6
— Extra	8 0 10 0
— Giants	10 0-12 0
— Jamaica	4 6- 6 0
— Loose, per dz.	0 9- 1 0
Blackberries, peck	2 0 2 6
Cranberries, per case	8 6- 9 0
Custard Apples, per dozen	8 0-12 0
Figs, per dozen	1 0- 1 3
— Italian, box	0 6- 0 9
— French, p. box	0 9- 1 3
Granadillas, dozen	2 0- 2 6
Grape Fruit, case	6 6- 9 0
Grapes (English), — Alnwick Seedling, per lb.	0 8-0 10
— Gros Maroc, per lb.	1 0 —
— Black Hambro, per lb.	0 6- 1 0
— Alicante, p. lb.	0 6- 1 3
— Gros Colmar, per lb.	0 9- 1 6
— Muscat, per lb.	1 6- 3 0
— Almeria, barrels	5 6- 9 0
Lemons:	
— Messina, case	16 0-22 0
— Naples, p. case	20 0 35 0
Lychees, per box	1 0- 1 2
Melons, each	2 0- 3 0
— Valencia, case	6 6- 7 6
Mangos, per dozen	3 6- 6 0
Medlars, crate	6 0- 6 6
Nuts, Cobnuts, per doz. lb.	6 0- 6 6
— Brazils, new, per cwt.	65 0-70 0
— Barcelona, per bag	24 6 —
— Walnuts, per bag	17 0 —
— per Grenoble bags	5 6- 6 0
— Cocoa nuts, 100	10 6-13 6
— Chestnuts, Redon bags	15 0-16 0
— Italian bags	18 0-20 0
Oranges, per case:	
— Jamaica	6 6- 7 6
— French, boxes	1 0- 2 0
Pears (English), ½ sieve	3 0- 4 0
— English, per bushel (56 lbs.)	5 6- 7 6
— American, barrels	15 0-20 0
— French, Williams, boxes	8 0- 9 6
— French, Williams, crates	7 0- 9 6
— Californian, pr. case	7 6-11 6
Persimmon, per box	0 9- 1 6
Pineapples, each	1 6- 3 0
Plums (English), ½ sieve (28 lbs.)	7 0- 8 0
— French, box	0 8- 1 3
— French, ½ sieve	3 0 —
— Californian, boxes	5 6- 7 0
Pomegranates, boxes	2 6 —
— cases	9 0-12 0
Quinces, per box	3 6- 4 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes (French), per dozen	1 6 —
Asparagus, Sprue French, bundle	0 7- 0 8
— Paris Green, bundle	3 6- 5 0
Aubergines, per dz.	1 0 —
Beans, home-grown, p. bushel (40 lbs.)	2 0 —
— Jersey, per lb.	0 4- 0 5
Beetroot, per bushel	1 0- 1 3
Brussels Sprouts, per ½ bushel	2 0 —
Cabbages, per mat	2 0 —
— red, per dozen	2 0 —
Carrots, French pad	3 0 —
— per bag, unwashed	1 6 —
— washed	2 6 —
Cauliflowers, p. tally	6 0- 7 0
Celery, per bundle	0 7- 0 8
Chicory, per lb.	0 3 —
Chow Chow, p. dz.	3 0 —
Cucumbers, p. flat, 2½ dozen	3 6- 4 0
— 3 dozen, small	3 0- 3 6
— per dozen	1 6- 2 6
Endive, per dozen	0 8- 1 0
Horseradish, foreign, per dozen bundles	1 8 0 —
Leeks, 12 bundles	1 6 —
Lettuce (French), per dozen	0 6- 0 9
— French Cos	3 0- 4 0
Mint, per dozen	2 0 —
Mushrooms (house) per lb.	0 10- 1 0
— outdoor, p. pk.	3 6- 4 0
— Buttons, per lb.	0 10- 1 0
Mustard and Cress, per dozen pun.	1 0- 1 6
Onions (Valencia), case	6 6 —
— Egyptian, bag	3 6 —
— pickling, per bushel	3 0 —
— French, ½ bag	2 6 —
— Dutch, bag	3 3 —
Parsley, 12 bunches	1 6 —
— ½ bushel	1 6 —
Parsnips, per bush.	1 0 —
Radishes (French), per dozen	1 6 —
Salsafy, per dozen bundles	3 6 —
Savoys, per mat	2 0 —
Tomatos:—	
— English, per 12 lbs.	4 6- 6 0
— small, selected per 12 lbs.	4 0 —
— seconds, per 12 lbs.	1 3- 1 6
— outdoor, per 12 lbs.	3 6- 4 0
— Canary, per bundle	8 0-14 0
Turnips, per cwt.	2 6 —
— bags	2 6 —
— washed, cwt.	3 0 —
Watercress, per doz. bunches	0 4- 0 6

REMARKS.—Barrels of Almeria Grapes are arriving in large quantities, and the supply is expected to exceed that received in any previous season. There is expected to be a good sale of Californian Plums and Pears during the present week. Muscat Grapes are dearer owing to short supplies. The supply of English Melons will probably be exhausted next week. Marrows are past. Trade generally is quiet. *E. H. K. Covent Garden, Wednesday, November 7, 1906.*

POTATOS.

Bedfords, 60s. to 65s.; Blacklands, 55s. to 60s.; Kents, 70s. to 80s.; Lincolns, 65s. to 75s. Trade is dull except for tubers of extra good quality. Many of the tubers on sale are badly diseased. The arrivals are light and prices are advancing. *Jas. Bath, 32 and 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Of the varieties of Chrysanthemums Ivory and the pink variety which are known in the market as White and Pink Star are now among the best dwarf sorts. I wrote last year that a good white variety was wanted for late in Octo-

ber and November; this is now confirmed, for good whites are cleared out very early. Boule de Neige, as grown by Mr. Ward, of Walthamstow, is fairly good. Val d'Andorre, from Messrs. Butler Brothers, is good. The best pink variety is still Mrs. Wingfield; La Pactole may be regarded as the very best October bronze-coloured variety for culture in pots. Soleil d'Octobre and its bronze variety are good, but taller. Market Red is one of the best reds. Kathleen Thompson is very bright and makes the best dwarf plant; its parent, Caprice du Printemps, is also very good. Erica hyemalis was never seen better, but unfortunately it is over plentiful, and the best plants do not clear out well. E. gracilis is also very good, the ordinary form being of good colour as well as profusely flowered. The white "Nivalis" is, though good, like the earlier variety "alba," being a little inclined to reversion. Cyclamen are now very good. Begonias Gloire de Lorraine and Turnford Hall are seen in well-flowered plants from Messrs. H. B. May & Sons and from Mr. Lang. Other growers are also supplying good plants. Marguerites and Spiræa japonica are capital. Lily of the Valley has been excellent, and has been cleared at very low prices. Lilums are only fairly good. I find that Solanums have ripened too early this season with many. When calling at Mr. F. Cubbs' nursery I noted house after house full of plants having ripe berries. Another grower who rarely starts with them until just before Christmas started bringing them to market a fortnight ago.

CUT FLOWERS.

Chrysanthemums still kill the trade for all other flowers. One man who receives them to sell on commission told me this morning that out of a large number of boxes of Soleil d'Octobre he was unable to sell a single box at a reasonable price. Roses were down in prices again at the end of last week, and do not seem likely to rise again. Carnations are plentiful, and one salesman comparing prices with those of a year ago finds that what he is now selling at from 2s. to 3s. per doz. were making on the same date a year ago from 3s. to 5s. Lilums have sold for higher prices since I wrote my last notes. Zonal Pelargonium, scarlet and white (double), are over plentiful. Orchids do not clear out readily; large quantities of Cattleya labiata remain on the stands at closing time; also Cypripediums, Eucharis, Gardenias, Camellias, Tuberoses, &c. Azalea Fielderi is down to about half the price it used to make. Lily of the Valley is still a drug in the market. Good English Violets are plentiful, but the imports much depreciate their value. The Parmas have advanced a little in price. Among other imported flowers Narcissus Paper White and Soleil d'Or are good, also Ranunculus, Rose Safrano, "Mimosa," and White Lilac. Asparagus, Smilax, Croton leaves, and other indoor foliage is plentiful. In hardy foliage the Scarlet Oak (Quercus coccinea) is now very bright. *A. H., Covent Garden Market, Nov. 7, 1906.*

Answers to Correspondents.

COLEUS THYRSOIDEUS: *J. W. Kenley.* There is no disease present to account for the leaves dropping. These have probably fallen as the result of some cultural defect, such as insufficient or too much water at the roots, or from subjecting the plants to a cold temperature. Keep the plants healthy, and do not overcrowd them. It requires much care and skill to prevent these Coleus from becoming "leggy" in dull weather.

CYCLAMEN: *W. A. W.* An article on the cultivation of this plant was published in our last issue, p. 302. Any further questions you may ask respecting the species we shall be glad to answer.

DISMISSAL FROM SERVICE: *Enquirer.* 1. The length of notice to be given depends upon the custom of the trade, and you should make enquiries of others in a similar position in your own locality; 2. If dismissed summarily through no fault of your own you could probably recover a sum representing wages equivalent to the time for which you would be entitled to receive notice. The fact that you receive your wages weekly will not necessarily be conclusive as to the length of notice you should receive. We are, of course, assuming there has been no special arrangement between you and your employer on the subject.

FIG TREES: *L. F.* Assuming that your Figs are of suitable varieties for fruiting out of doors, and that they have been planted in a suitable situation, and in soil which is not likely to induce them to make gross and sappy growth, there should be little difficulty in securing a crop. Figs growing under such conditions, and providing that the root action and top growth are well balanced, need very little stopping, excepting of such shoots as extend beyond their proper boundary. It is only in exceptionally favoured situations that out-of-door trees can produce two crops of Figs in the season. Therefore, those which have formed at the present time should be rubbed off. It is the small embryo "fruits" formed towards the extremity of the shoots that will mature the crop next season. Thorough ripening of the wood is essential. Immediately the crop is finished remove all exhausted and useless branches, leaving only a sufficient number of those of the current year's growth and that are strong enough to produce fruit. These should be nailed close to the wall that the sun-heat will harden and ripen them. In your locality it would not be advisable to pinch the shoots as suggested; seek to obtain short-fruited, hard wood. In the spring when growth commences many more shoots will appear than are required for laying in. Severely disbud therefore, so that sunlight and air may easily reach each individual shoot.

GERMAN AND FRENCH DIRECTORIES: *J. T. M.* We do not know of such works. We advise you to write to the Editor of one of the German and of one of the French gardening papers.

GRAFTING ROSES ON TO OLD APPLE TREES: *A. C. H.* We do not think this would be impossible, for the relationship between the genera is quite as close as in many instances where successful grafts have been made by M. Daniel. At the same time, we may point out that many things are possible that are not expedient, and it is difficult to see what good purpose would be served by such grafts unless they were undertaken for the sake of scientific investigation.

GRAPE LADY DOWNES SHRIVELLING: *J. McC.* The berries are not diseased. Shrivelling is often found in this variety, and is generally the result of growing the vines in too cool an atmosphere, from which reason the fruit does not ripen perfectly. They should have a south aspect and sufficient artificial heat to properly finish their berries. See that the roots are not in a cold underdrained border. In the great vinery at Chiswick, Lady Downes always developed in a manner similar to that shown in your specimens. They were planted on the north side of the house, whereas on the opposite and warmer side Muscat of Alexandria was brought to a fairly successful condition of ripening. These remarks apply also to the other varieties you mention.

KNOWLEDGE OF TREES AND SHRUBS: *Magi.* We suppose you are referring to private gardening in this country and, if such is the case, the knowledge obtained by the study of trees and shrubs would the better equip otherwise good and experienced gardeners for the management of big country estates where trees and shrubs are leading features, and for fulfilling the duties of park superintendents. But unless you obtain experience of other horticultural practice the mere study of trees and shrubs would not be likely to help you to a successful position. If your education is sufficiently advanced to enable you to pass the examinations of the Indian Forest Department, previous experience with trees and shrubs would help you in obtaining an appointment, and these positions carry with them satisfactory remuneration.

LIGHT: *N.* The clearer and freer from colour the glass, the better for the plants. Yellow and red are less prejudicial to the growth of plants than blue, which, as it were, destroys the yellow rays. Under blue or violet glass very little carbon dioxide is decomposed, and consequently comparatively little starch is formed and relatively little growth takes place.

NAMES OF FLOWERS AND FRUITS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* C. H. 1, Scarlet Loddington; 2, Sam Young; 3, not recognised; 4, Welford Park Nonsuch. —*Subscriber.* 1, Madame André Leroy (a fairly good variety); 2, Marie Louise (good); 3, Fondante de Cuerne (fairly good); 4, Doyenné du Comice (good); 5, Hessle (inferior); 6, not recognised. With the exception of Nos. 2 and 4 the others are but little use for show purposes. —*A. M.* 1, Court Pendu Plat; 2, Blenheim Pippin.—*F. Walstead.* Keeping Red Streak.—*A. Bateman.* 1, a very nice Apple which we fail to recognise, but one worthy of planting; 2, Reinette van Mons; 3, Small's Admirable; 4, Harvey's Wiltshire Defiance; 5, Blenheim Pippin; 6, Lodgemore Nonpareil.—*W. D. S.* 1, White Paradise; 2, Old Nonsuch; 3, much resembles a very fine Ribston Pippin.—*F. A. Allchin.* 1, Ross Nonpareil; 2, Blenheim Pippin; 3, Hanwell Souring; 4, Hollandbury.—*J. J.* 1, Golden Nonpareil; 2, Malster; 3, Warner's King; 4, Winter Hawthornden; 5, Niton House; 6, Ross Nonpareil.

NAMES OF PLANTS: *E. C. Lowndes* (delayed). Fraxinus Ornus (Manna Ash).—*C. E. F.* Probably a small flower of Gloire de Dijon.—*Shelley.* Lycium sinense, sometimes called Tea-tree, because it is not a tree and has nothing to do with Tea.—*G. M. D.* 1 and 2 are perennial Asters, but you do not send sufficient for identification; 3, Solidago serotina; 4, Nepeta glechoma variegated variety.—*C. A.* 1, Eulophia englossa; 2, Epidendrum ochraceum; 3, Masdevallia nidifica; 4, Pteris tremula; 5, Adiantum gracillimum.—*P. J. P.* Maxillaria picta and Cotoneaster Simonsii.—*C. A.* Strelitzia Reginæ.—*G. F. D.* Potentilla reptans.—*J. W. B.* Maxillaria grandiflora.—*J. A. C.* Pinus contorta.

NARCISSUS OBVALLARIS FOR FORCING: *A. R. B.* When preparing all kinds of Daffodils for forcing, the possibility of injury from frost should be effectively guarded against at the start. For many sorts the covering you mention would be quite inadequate, and a more vigorous-rooting kind than that mentioned would long ago have lifted itself clean out of the soil. The consequent re-planting of the bulbs and breaking of the root fibres would have injured the plant and have caused a heavy loss to the grower. Are you quite sure the bulbs are not even now uplifted, it being early for even this early kind to have made much growth? If you can convince yourself that the bulbs are safe and resting on the planting-base, afford them an additional covering of 2 inches of the same material; 4 to 6 inches of thoroughly seasoned coal ashes is best, or this and cocoa-fibre in equal parts. Remove the bulbs under cover at the end of the present month, allowing them to remain a week or 10 days in a cold house. After this period has elapsed, close the house and commence to force with an atmospheric temperature of 45° by night. A few days later, if progress is apparent, increase the heat very gradually to 55°. Ample moisture in the atmosphere and a cool base for the plants are essential conditions.

RATING FOR BUILDINGS: *Ashtonian.* You are rightly assessed so far as the Agricultural Rates Act is concerned. This Act draws a special distinction between land and buildings, and the courts have held that greenhouses are buildings in this sense, although not necessarily so regarded for other purposes. For instance, an occupier of land in an urban district used as a market garden or nursery ground is entitled to be assessed for rates levied under the Public Health Act, 1875, only in the proportion of one-fourth part of the net annual value of the land, notwithstanding that such land may be covered with greenhouses. This decision was given in an appeal made against a General District Rate.

TOMATOS: *Tomato, Ayr.* After a more careful examination we have failed to find any evidence of fungoid disease, but are confirmed in the opinion that the marks have been caused by punctures. We should not hesitate to employ seeds from such fruits for raising stock next season.

WHITE CARNATION: *G. & W.* The flowers are pleasing in appearance and very fragrant. You should send three plants in flower to the Royal Horticultural Society's meeting, on November 20, for the consideration of the Floral Committee. A good, white variety is that known as White Perfection, and although your seedling is a good one, it may not be superior to that. The habit of the plant is an important point to consider, and the calyces should be "non-splitting."

COMMUNICATIONS RECEIVED.—S. M., Cape Colony (your letter has been forwarded).—E. F. C.—G. P. & Son—M. M. —Enquirer—T. H. B. J. McL.—Cambria—E. A. H.—Pomme—A. E. M.—Lincoln—Zola—C. P.—A. K.—F. C.—W. S. L.—O. T.—J. J. W.—C. T. D.—L. C. W.—E. H. J. —E. R.—Lord L.—J. B.—J. D.—G. P.

SHOWS OF THE WEEK.

National Chrysanthemum Society.

NOVEMBER 7-8-9.

CHRYSANTHEMUMS have come to us this season whilst the gardens are still green, and Dahlias, Salvias, and even Heliotropes, in many localities are uninjured in the beds and borders. Border Chrysanthemums, even in the London gardens and parks, are still flowering freely as we write, and yet the National Chrysanthemum Society has opened its biggest exhibition of the season in the Crystal Palace, at Sydenham. All these circumstances have the effect of making us feel that the exhibitions have fallen upon it unusually early, and perhaps the thick fog London experienced on Tuesday morning last was needed to bring the fact more clearly home to us that, November being already a week old, winter is at hand, in spite of the appearances of the vegetation out-of-doors.

The display at Sydenham was opened in good weather, and the attendance of visitors, especially in the afternoon, appeared as large as usual. The exhibition was, perhaps, not equal to some preceding ones, but it was, nevertheless, a fine display, and the general quality of the blooms was good. The competition in some of the larger classes was weak, but, generally, the smaller ones were well contested. We noticed a falling off in some of the classes in which the blooms are shown in vases, although the quality of the flowers staged in this decorative section was generally of a high order of merit. The decorative classes were better than ever.

The Society's FLORAL COMMITTEE granted their Certificate of Merit to six new varieties, among which were three single-flowered varieties. Outstanding features were the large non-competitive displays, staged by Mr. H. J. JONES, Mr. NORMAN DAVIS, and Messrs. H. CANNELL & SONS, which were deserving of unqualified praise.

This is the first November exhibition to be held since the appointment of Mr. Witty as Secretary. If the weather during the summer had been less hot, and the atmosphere less dry, it is probable the exhibition would have been as large as any which has been held.

There were classes for hardy fruits and Grapes in addition to those for Chrysanthemums, and Mr. Robert Sydenham offered special prizes for vegetables, which brought together a display of good produce.

DISPLAYS OF CHRYSANTHEMUMS.

The floral display of Chrysanthemums consisted of plants in pots, cut blooms arranged as bouquets, in vases, single, semi-double, Pompon, &c., with foils in foliage plants, such as small Palms, Crotons, Asparagus plumosus, Ferns, and a variety of stove and greenhouse plants of that class. The form was circular and pyramidal, rising to 10 feet in the centre. It was really a great mass of bloom, not much relieved by the greenery employed. The Japanese blooms formed, together with the single and semi-double flowered varieties, the main points of attraction. The group was rendered lightsome by the employment of cut blooms arranged in vases near the margin of the group. The exhibitors were Messrs. JOHN PEED & SON, West Norwood, S.E. To this group a large Gold Medal was awarded.

The second prize for a group was awarded to Mr. W. Howe (gr. to Lady TATE, Park Hill, Streatham Common). From this class the trade was excluded. The group covered a space of 200 square feet, as against 300 feet in the group just mentioned, but the contour was the same, and the varieties of which it consisted were mostly Japanese, yellow tints being predominant. As affording desirable contrasts, Crotons, dwarf Ferns, Dracaenas, Palms, and slender Bamboos were used as solitary examples near the outside, and a Palm capped the group. The general effect was somewhat heavy, and what tended to heighten this feature was a large group adjoining, which was very differently arranged.

COMPETITION OF AFFILIATED SOCIETIES.

The objects to be shown may include any section of Chrysanthemums, but not fewer than four, and a table space of 24 feet by 3 feet was allowed for each exhibit, flowers to be shown with foliage, in vases.

The 1st prize was awarded to the DULWICH SOCIETY, the exhibitors being Messrs. Winter, Croft, Taylor, J. Faulkner, M. Faulkner, Rouse, and Sibley. Incurved Japanese, small-flowered decorative, Anemone-flowered, semi-double, single-flowered, and Pompons being the types included in the exhibit, and, as staged, a good display resulted. The 2nd prize was awarded to the EPSOM & DISTRICT CHRYSANTHEMUM SOCIETY, Mr. J. Hunt showing. The section shown were Japanese, single-flowered, semi-double, decorative, but only two Incurved varieties. The arrangement of the blooms with foreign foliage had a pleasing effect. The 3rd prize was awarded to the WANSTEAD & DISTRICT CHRYSANTHEMUM SOCIETY, with exhibitors Messrs. Runciman, Place, Fisher, and Jones. Here were observed blooms in fair condition of Japanese and Incurved varieties, and a number of varieties of the single-flowered decorative, single-flowered Pompon types, &c. The awards consisted of a Challenge Trophy and also of money prizes.

BLOOMS SHOWN IN VASES.

Sixty blooms in twelve varieties.—This class calls for 12 vases, each to contain five specimen blooms of one variety. The 1st prize fell to Mr. W. IGGULDEN, Locke Hill Nurseries, Frome, Somerset. The varieties were F. S. Vallis, Mrs. A. H. Lees, Miss Elsie Fulton, Mrs. W. Knox, President Viger, Mad. P. Radaelli, Gen. Hutton, Mrs. Mease, Reginald Vallis, Mrs. J. Dunn, Lady Henderson, Mad. R. Oberthur. 2nd, Mr. C. BECKETT, Chilton Lodge, Hungerford, whose flowers were of very fine quality. The 3rd prize fell to Mr. C. J. DECKER (gr. to the Hon. Miss CANNING, Frant Court, Sussex). These were large, fresh-looking blooms, but were lacking in finish compared with the two other exhibits.

For the Challenge Trophy offered by the Ichthemic Guano Co., Ipswich, for six vases of Incurved blooms, shown to the number of six in each vase, there were many excellent blooms shown, clean, large, and in perfectly good condition. The 1st prize lot, shown by Mr. W. Higgs (gr. to J. B. HANKEY, Esq., Fetcham Park, Leatherhead), consisted of Duchess of Fife, Mr. G. Denyer, Emblème Poitevin, C. Curtis, Buttercup, and Mad. Vrembley. The three yellow flowers in this exhibit could scarcely be surpassed. 2nd, Mr. G. J. Hunt (gr. to PANTIA RALLI, Esq., Ashtead Park, Epsom), whose only fault, perhaps, in the estimation of the judges, consisted in the slightly unequal size of his blooms. The following were the finer, viz., Lady Isabel, Godfrey's Eclipse, Globe d'Or, and Duchess of Fife. 3rd, Mr. R. J. JOLLIFFE, Fern Bank, Bonchurch, Isle of Wight, his best being Mrs. J. P. Bryce.

VASES OF JAPANESE VARIETIES OF SPECIAL COLOURS.

Three classes were provided, for vases of half-a-dozen blooms of white, yellow, and any other colour than white or yellow. These usually make a fine display, but this year's competition was poor, although the quality of the flowers staged left little to be desired. The best in the white section was Mrs. A. T. Miller, a splendid variety of pure white, by the side of which Miss Elsie Fulton appeared creamy-white. JOHN BALFOUR, Esq., Moor Hall, Hadlow (gr. Mr. A. Jefferies), staged the premier vase (Mrs. T. A. Miller), Mr. G. MILEHAM being 2nd with the same variety; 3rd, Mr. W. IGGULDEN, Frome, Somerset, with Miss Elsie Fulton. Rather stronger competition obtained in the class for a yellow variety, seven vases being seen, and of these the best was Mr. JEFFRIES' vase of F. S. Vallis. 2nd, Marquis CONYNGHAM, Bifrons, Canterbury (gr. Mr. D. Fairweather), with the same variety.

Mr. JEFFRIES also showed the best vase of any other coloured variety in Reginald Vallis, with blooms of great depth, Mr. IGGULDEN being 2nd with Mad. Paolo Radaelli.

Single bloom of Mrs. W. Knox.—Mr. W. Wells offered special prizes for one bloom of Mrs. W. Knox, a yellow Japanese variety. 1st, Mr. MEASE (gr. Downside, Leatherhead), receiving Mr. Wells' Gold Medal; 2nd, Mr. C. Beckett (gr. to Sir W. G. PEARCE, Bart., Chilton Lodge, Hungerford); 3rd, Mr. HOWE (gr. at Park Hill, Streatham). Eight competed.

POMPONS.

The principal class for these flowers was that for nine distinct varieties in vases containing six blooms in each vase. Only two growers competed, and of these Mr. CARVER, Aldenholme Gardens, Weybridge, was easily first. He had the peerless Mad. Elsie Dordan in fine style, also La Vogue (a beautiful yellow variety), Prince of Orange, Pygmalion, Black Douglas, &c. 2nd, Mr. J. A. HUMPHRIES, with flowers of less perfect form. Prince of Orange was, however, very good.

Mr. HUMPHRIES was the only exhibitor of six bunches of Anemone Pompons, shown in vases of six blooms, and he was awarded the 2nd prize.

Single varieties.—The only open class for these delightful flowers was that for twelve vases of not fewer than six varieties. They were allotted a space measuring 8 feet by 3 feet for each exhibit, and grasses and natural foliage were allowed for their better display. There were five exhibits, the premier one being staged by Mr. H. Redden (gr. to G. W. BIRD, Esq., Manor House, West Wickham, Kent). This was certainly the best exhibit, the flowers being large and remarkably refined. Miss Tackey Bird (white) was shown splendidly, and equally good were Crown Jewel Improved (bronze), a soft yellow unnamed seedling; Mary Foreman (white), Maud Matthews, &c. 2nd, J. COURTENAY, Esq., The Whim, Weybridge (gr. Mr. W. C. Pagram), who showed a fine vase of A. Farina. 3rd, Mr. G. HEMMING, Alexandra Palace, N., who had the charming flower named after Miss Mary Anderson in excellent form.

BLOOMS SHOWN ON BOARDS.

JAPANESE VARIETIES.

Forty-eight blooms, distinct.—The Holmes Memorial Challenge Cup and the 1st prize were won by Mr. T. Stevenson (gr. to E. MOCATTA, Esq., Woburn Place, Addlestone) with a large, even lot of flowers of H. Perkins, Reginald Vallis, Duchess of Sutherland, Mad. Carnot, Bessie Godfrey, Magnificent, a variety truly deserving its name, the colouring crimson and gold, and form good; Algernon Davis, W. Goldring, Mrs. J. Dunn, Norman Davis, Mrs. R. Hooper Pearson, Valérie Greenham, Mad. Oberthur, Miss Codrington, Mr. J. Haddaway, Lady Conyers, Wickham, M. G. Henri, Mrs. A. H. Lee, Mr W. Mease, Miss M. Ware, Mad. C. Nagelmackers, Mrs. F. W. Vallis, Miss Olive Miller, Maud de Crozy, Edith Smith, Sensation, J. H. Silsbury, Mrs. J. F. Duck, Mad. A. Debono, Montigny, W. Etherington, Gen. Hutton, W. R. Church, Mrs. G. Mileham, Yellow Nagelmackers, Nellie Bean, May A. Pockett, Leigh Park Wonder, Lord Ludlow, Kathleen Stoop, Mrs. C. Beckett, Mrs. W. Knox, F. Sargeant, F. S. Vallis, Walter Jinks, and Mrs. A. F. Miller. The 2nd prize in this class was awarded to Mr. W. MEASE (gr., Down-

side) with blooms but little in quality and size behind the winning stand. The finest blooms were Valerie Greenham, a prodigious bloom; Mrs. W. Knox, Lord Ludlow, Leigh Park Wonder, Lady Lennard, Miss Codrington, Mrs. E. J. Brooks, Bessie Godfrey, Miss O. Miller, Florence Penford, Walter Jinks, Donald McLeod, Norman Davis, Algernon Davis, Mrs. R. H. Pearson, and F. S. Vallis. 3rd, Mr. G. J. Hunt.

Twenty-four blooms, distinct.—The President of the Society, C. E. Shea, Esq., offered a special prize of five guineas for the best 24 blooms of Japanese varieties, distinct. There were seven entrants, the premier collection being staged by A. James, Esq., Cotton House, Rugby (gr. Mr. A. Chandler). It was a closely-contested class, and the 1st prize collection was closely followed in point of merit by those shown by John Balfour, Esq., Moor Hall, Hadlow, Essex (gr. Mr. A. Jefferies), while the 3rd prize collection was also of high merit, this being shown by E. Mocatta, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson). Mr. Chandler's flowers were F. S. Vallis (a beautiful specimen), Miss M. Ware, Mrs. A. T. Miller, President Viger, Henry Perkins (a full flower of exceptional merit), Duchess of Sutherland (weak), Miss O. Miller, Algernon Davis, Walter Davis (a grand Incurved flower), Ethel Fitzroy, Valerie Greenham, Mrs. R. Hooper Pearson, Marquis V. Venosta, Henry Stowe, Mad. P. Watme, Mrs. G. Mileham, Mrs. E. Crossley, Australie, Gen. Hutton, Mad. A. Bertrand, Mad. G. Rivol (a fine flower), Reginald Vallis, and Bessie Godfrey (soft sulphur-yellow). Mr. Jefferies had also a very even lot of flowers, all clean and well coloured, his best examples being Mrs. A. T. Miller (a magnificent white Chrysanthemum of immense size), F. S. Vallis, E. J. Brooks (beautifully coloured), Montigny, Mrs. A. H. Lee (red), and Godfrey's Pride.

Twelve Japanese blooms, distinct.—Half-a-dozen entries were seen, the best six blooms being equal to any in the show. Mr. Chandler was again the successful exhibitor, and he had F. S. Vallis, Valerie Greenham, Algernon Davis, W. Jinks, Bessie Godfrey, Henry Perkins, Paul Watme, Miss M. Ware, Gen. Hutton, Mrs. G. Mileham, and Ethel Fitzroy, all up to the best exhibition standard, the first-named being a wonderful bloom. Mr. Jefferies again followed with an exhibit of much merit, and was worthily awarded the 2nd prize, Reginald Vallis, Mrs. A. T. Miller, Godfrey's Pride, and J. H. Silsbury being among his best examples. 3rd, J. Barker, Esq., M.P., The Grange, Bishop's Stortford (gr. Mr. G. Beech), whose flower of Norman Davis was intensely coloured and was a bloom of exceptional merit. Mr. Beech is to be congratulated on his first entry as an exhibitor of Chrysanthemums.

Incurveds.

Thirty-six blooms, distinct.—This competition, for the Holmes Memorial Challenge Trophy and valuable money prizes, brought the best blooms of Incurved varieties observed on this occasion, many of them scarcely to be excelled. The winner of the 1st prize was Mr. W. Higgs (gr. at Fetcham Park). His back-row flowers were Bryant, Mrs. J. P. Bryce, Lady Isabel, Buttercup, Hanwell Glory, Mrs. E. Judson, Doris Raymon, Godfrey's Eclipse, Emblème Portevin (a grand flower; Duchess of Fife, Miss E. Holden, and Violet Carpenter. 2nd row, Frank Hammond, Le Peyton, Mrs. G. Denyer, Margaret Brown, Mrs. B. Hankey, Topaz Oriental, Mrs. A. H. Hall, Somerset de W. Chisman, W. Higgs, Ma Perfection, W. Biddle, Beacon. Front row, Countess of Warwick, Lady Wall, of a peculiar lilac tint, very attractive, Oshkosh, Fred Palmer, Amber Beauty, J. Agate, W. Pascoe, C. Curtis, Frank Treshan, Mrs. J. Seward, C. B. Whitnall, and Mad. Vrembley. 2nd, Mr. G. J. Hunt (gr. at Ashtead Park), extra good being Duchess of Fife, R. C. Kingston, W. Fuller, Mrs. B. Hankey, Ada Owen, Buttercup, Mrs. J. Seward, Frank Treston, W. Pascoe, Emblème Portevan, Amber Beauty, and Mrs. E. Judson. 3rd, Mr. W. Mease (gr. to A. Tate, Esq., Downside, Leatherhead), with good flower, rather undersized. Commendable were Triomphe de Montbrun, W. Pascoe, Mad. de Vernene, a lovely lilac, Cecil Cutts, a very brilliant yellow flower, Miss N. Southam, Mrs. E. Judson, C. Block, and Doris.

Twelve blooms, distinct varieties.—This was a well-contested class, seven exhibits being staged, but great difference was noticed among the individual collections, the winning flowers being double the size of some of the others. Again Mr. Chandler was to the fore, his examples being Buttercup (a very large and well-coloured bloom, but rather loose), Lady Isabel, W. Biddle (a very large flower), Mrs. Judson (highly refined and of excellent shape), Mrs. Chas. Crooks, Emblème Portevin, Ada Owen, Mrs. Aphin, Mrs. J. P. Bryce, C. H. Curtis (one of the best yellow varieties), Fred Palmer, and Margaret Brown. 2nd, A. T. Miller, Esq., Emlyn House, Leatherhead (gr. Mr. G. Mileham), whose flowers were little inferior to those shown in the 1st prize exhibit, with Ada Owen, C. H. Curtis, Lady Isabel, Duchess of Fife, &c. 3rd, J. B. Hankey, Esq., Fetcham Park, Leatherhead (gr. Mr. W. Higgs), with a smaller but very even lot, his Duchess of Fife being perfect in form.

Six Incurved blooms of one variety.—Mr. Mileham had the best among six displays, his variety being the large yellow Buttercup. 2nd, Panyta Ralli, Esq., Ashtead Park, Epsom (gr. Mr. G. J. Hunt), with Duchess of Fife; 3rd, A. Kempt, Esq., 15, Ross Road, South Norwood (gr. Mr. A. Osmond), with the variety C. H. Curtis.

Reflexed Varieties.

A class was provided for 12 blooms of Reflexed varieties, which brought three entrants. The largest and the best flowers were those exhibited by A. G. Meissner, Esq., Aldenholme, Weybridge (gr. Mr. T. Carver), whose best examples were Dorothy Gibson (a large yellow variety), Clara Jeal (white), Cullingfordi (deep red, a beautiful and rich colour), Miss F. Lunn (magenta), and Golden Christine. 2nd, J. L. Burgess, Esq., Marsey Hampton, near Fairford, Glos. (gr. Mr. J. A. Humphries). King of Crimsons and Dorothy Gibson were his best examples. 3rd, J. Courtnay, Esq., The Whim, Weybridge (gr. Mr. W. C. Pagram).

Anemone and Pompon Varieties.

Twenty-four large-flowered Anemone blooms, distinct.—Japanese blooms were allowed, but these were less beautiful than the pure Anemone type of flower, appearing ragged by comparison. The best among two displays were those shown by T. L. Boyd, Esq., North Frith, Tonbridge, Kent (gr. Mr. A. C. Horton). As a selection we may instance Sir W. Raleigh, Le Chalonais, Delaware, Mrs. Judge Benedict, Sabine, Mad. Chas. Lebocq, Lady Margaret, Descartes, and John Bunyan. 2nd, Mr. Humphries, Hill House Gardens, Fairford; Mr. Horton and Mr. Humphries also contested in the class for 12 varieties, and were again awarded the 1st and 2nd prizes respectively.

Twelve large-flowered Japanese Anemone varieties.—The only contestants were again Mr. Horton and Mr. Humphries, and again the awards were the same. Mr. Horton showed good examples of Sabine, Sir W. Raleigh, Owen's Perfection, Sœur Dorothee Souille, Hugh Gardiner, &c.

Decorative Classes.

Three vases of Chrysanthemums. This was a keenly-contested class, and the judges must have had no light task in apportioning the awards. There were nine exhibits, that shown by Miss C. B. Cole, The Vineyard, Feltham, being adjudged the best. Yellow and red Chrysanthemums, of small varieties, intermingled with grasses and sprays of Ampelopsis, formed a light and graceful exhibit. 2nd, Mr. D. B. Crane, Highgate, who utilised white and pink single varieties.

Two vases of Pompon or Anemone-Pompon Chrysanthemums. Mr. A. Robertson (gr. to F. J. Yarrow, Esq., 18, Abbey Road, St. John's Wood) won with a somewhat heavy arrangement. 2nd, Mrs. Conn, Peak Hill Lodge, Sydenham.

One vase of a Japanese variety, arranged with any foliage.—Mr. Jefferies, Moor Hall Gardens, Hadlow, Essex, showed magnificent blooms of F. S. Vallis, arranged with Beech and Maple foliage, and these were awarded the 1st prize. Six exhibits were seen in this class, the next best being a vase of the same variety shown by Mr. D. Fairweather, Bifrons Gardens, Canterbury.

A basket of autumn foliage and fruits.—Miss Cole was to the fore with a very large basket, tastefully decorated with Honesty, Iris fruits, Bracken, Clematis vitalba, Blackberries, Physalis, Mountain Ash, and many others of equal beauty.

Plants.

Six bush specimens.—1st, Mr. H. Runciman, nurseryman, Nightingale Lane, Wandsworth, with examples 3 to 4 feet in height, with about a dozen blooms on each, Japanese, Anemone Japanese, well grown and stiffly trained. 2nd, Mr. C. Hazelgrove (gr. to W. Bander, Esq., 13, Crescent Wood Road, Sydenham Hill), having taller plants carrying more blooms than the foregoing, that were less in size.

Four trained Pompon specimens.—2nd, Mr. Runciman.

Four trained specimens, any varieties.—Here the previously named exhibitor was again 2nd. So far as we could learn, no 1st prizes were awarded in either competition.

One trained specimen was shown by Mr. T. W. Stevens (gr. to W. H. Stone, Esq., Donnington, Sydenham); a good plant, finely flowered.

Amateur Classes.

Section A.

Keen competition was seen in these classes, and among the Japanese section some fine exhibits were staged.

Eighteen Japanese blooms, distinct.—Half-a-dozen good displays were seen. Not much difference in quality obtained between the 1st and 2nd prize groups, but J. L. Burgess, Esq., Fairford, Glos. (gr. Mr. J. A. Humphries), had slightly the better flowers, and he was awarded the premier prize. They were a fresh, even lot of blooms, the pick being Mr. F. S. Vallis, Ethel Fitzroy, Mr. T. Carrington, Mad. P. Radaelli, T. Humphries (small, but well coloured), Montigny, and Godfrey's Masterpiece. Mr. C. B. Gabriel, Horsell, Surrey, followed, having Mrs. J. Brooks, W. R. Church, Walter Jinks, Bessie Godfrey, Mrs. W. Knox, &c.

Twelve Japanese blooms, distinct.—One more exhibit than in the preceding class was seen, Mr. Cordell winning with large, refined blooms. He showed an excellent bloom of Walter Jinks, an Incurved mauve-pink variety.

Six Japanese blooms, distinct.—This smaller class brought eight entrants, the best being shown by A. F. Blades, Esq., Reigate, Surrey (gr. Mr. F. Cordell). The flowers were heavy, but somewhat flat. J. H. Doyle was a prominent variety. 2nd, D. Link, Esq., The Avenue, Beckenham (gr. Mr. Trowell).

The best six Japanese blooms of one variety were shown by W. H. Stone, Esq., Sydenham (gr. Mr. T. W. Stevens), the variety being F. S. Vallis.

Twelve Incurved Chrysanthemums, distinct.—This proved a weak class. Mr. A. Osmond won with much the best flowers among two, Mr. J. A. Humphries taking the 2nd prize.

Mr. Osmond also won in the class for six Incurved blooms, being again followed by Mr. Humphries; but they reversed these positions in the class for six Incurved blooms of one variety, the winner having Buttercup in splendid form.

Section B.

Special prizes were offered by the President and others in this section for a decorative display of Chrysanthemums arranged with any suitable foliage and occupying a table measuring 8 feet by 6 feet. Quality of flowers was not the first consideration, but lightness and general decorative effect. All flowers had to be grown by the exhibitor. There were not many exhibits, but the premier one staged by Mrs. Brewster, Canterbury, formed a charming display. It was decorated with small single and Pompon flowers in rustic flower holders, bowls, and as a centre piece a charming basket of the red Mrs. Chas. Curtis (single) with Asparagus and tinted leaves. 2nd, Mr. A. Taylor, 5, Vernon Terrace, East Finchley, with a more heavily arranged exhibit.

Eighteen Japanese blooms, distinct.—Mr. T. Sharpe, 1, Railway Terrace, Stone, Greenhithe, Kent, showed the better of two good exhibits, his competitor being Mr. T. J. Cutting, Hedley, Hendon, who was awarded the 2nd prize.

Twelve Japanese blooms, distinct.—Mr. Sharpe again won against rather stronger competition, there being five exhibits. His best flower was F. S. Vallis, but he had others of good quality,

notably Henry Perkins, Godfrey's Pride, and Valerie Greenham. 2nd, Mr. C. M. COLLINGWOOD, St. David's Hill, Exeter.

Twelve Incurved Chrysanthemums.—Not fewer than six varieties were permitted in each group. Mr. T. SHARPE won with much the best flowers, a really fine exhibit, the best among three.

Mr. T. W. STEVENS, Laurie Bank Gardens, Sydenham, showed the best pair of bouquets of Chrysanthemums, the one being composed of white and rose-coloured "singles," the other of small yellow and bronze-coloured decorative varieties, with Asparagus plumosus as greenery.

The best vase of five large Japanese blooms arranged with suitable foliage was put up by Mr. C. B. GABRIEL, Horsell, Surrey, who showed F. S. Vallis, with grasses, Oak foliage, &c.

Mr. D. B. CRANE, 4, Woodside Terrace, Archway Road, London, N., showed the best vase of large decorative Chrysanthemums, having yellow flowers with beautiful sprays of Berberis vulgaris.

Mr. W. C. PAGRAM exhibited the best vase of single Chrysanthemums.

CERTIFICATES TO NEW VARIETIES.

C. Fred Duck.—A Japanese variety of a shade of red, with a lighter reverse, a flower after the style of Mrs. F. W. Vallis. Shown by Mr. HENRY PERKINS, Greenlands Gardens, Henley-on-Thames.

C. Glitter.—A Japanese variety, described on p. iv. Shown by Messrs. W. WELLS & Co., Merstham.

C. Miss Olive Dumsday.—A small Japanese or market variety, of a soft shade of pink. Shown by Messrs. CRAGG, HARRISON & CRAGG, Heston.

C. Lizzy.—A single-flowered variety of a rosy-pink colour, with a white zone around the disc.

C. Beauty of Weybridge.—Another single flower, with bronzy-chestnut-coloured florets. The two last-named varieties were shown by Mr. W. C. PAGRAM, The Whim, Weybridge.

C. Mrs. H. Redden.—A large single variety, buff-yellow, faintly tinted with rose. Shown by Mr. F. MATTHEWS, Wood Lodge, West Wickham.

NON-COMPETITIVE EXHIBITS.

Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, staged a magnificent group of Chrysanthemums that was awarded the Simpson Gold Medal as being the best non-competitive exhibit in the show. It was circular in form, and was arranged on a drapery of green muslin, in excellent taste. Large tripods furnished with Japanese blooms, handsome vases filled with choice blooms, dwarfer vases and clumps of decorative varieties interspersed with suitable greenery in the form of Ferns, Bamboos, Palms, and other graceful plants that gave additional beauty, all contributed to a magnificent display. (Large Gold Medal.)

Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, put up a large and beautiful group of Chrysanthemums that contained many excellent blooms of the best Japanese varieties, interspersed with epergnes of single and decorative kinds. The best feature of this praiseworthy exhibit was the extra good quality of the flowers it contained. (Small Gold Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, showed many large Japanese blooms, including very large flowers of Valerie Greenham, General Hutton, Botleigh Grange (crimson), Violet Carpenter (creamy-white Incurved), Mrs. A. T. Miller, &c.: also a table filled with the best single varieties, another of Celosias and winter-flowering Begonias, and vases of Zonal Pelargoniums, and a small group of select varieties of Cannas, including the new Franz von Vecsey (rosy-pink, a new shade in these flowers). Messrs. CANNELL also showed a fine display of hardy fruits, including about 150 varieties of Apples that were coloured to a high degree. (Large Gold Medal.)

Mr. J. WILLIAMS, 4a, Oxford Road, Ealing, W., showed a pretty exhibit, utilising metal arches, epergnes, &c., for the display of single varieties, relieved with autumn leaves. (Small Silver Medal.)

Mr. W. J. GODFREY, Exmouth, Devon, showed many of the newer varieties of Japanese Chrysanthemums, with epergnes of smaller flowering varieties at the background, the whole being relieved with sprays of ornamental foliage and having an edging of Asparagus Sprengeri and Panicum variegatum. (Silver Gilt Medal.)

Mr. W. J. COLE, Midland Road Nursery, Peterborough, showed blooms of Japanese varieties of Chrysanthemums in exhibition boxes and vases. (Small Silver Medal.)

Messrs. JOHN LAING & SONS, Forest Hill, London, displayed a group of pot plants of Japanese varieties of the best garden kinds, with a few plants of "singles" in the foreground. On an adjoining table Messrs. Laing exhibited small plants of Codiæums (Crotons), with Palms, Ficus radicans, &c. (Large Silver Medal.)

Mr. PHILIP LADDS, Swanley Junction, Kent, exhibited bunches of market varieties of Chrysanthemums. The blooms were not excessively large, but they were exceedingly bright, and quite the best for decorative purposes as cut flowers. On another table Mr. Ladds displayed Ericas in variety, Callas, Palms, Ferns, and other florist's plants. (Small Gold Medal.)

HOBBIES, LTD., Dereham Nurseries, Norfolk, showed garden Roses and the large Pæony-flowered Dahlias. (Silver Gilt Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, London, N., staged plants and cut flowers of choice American Carnations, and a handsome group of miscellaneous plants—Ericas, Liliums, Azaleas, Begonias, Ferns, Skimmia japonica in fruit, Astilbe (Spiræa), &c. (Small Gold Medal.)

Messrs. RASMUSSEN & CRONE, Woodbine Nurseries, Wanstead, N.E., filled a table with well-grown plants of Begonias Gloire de Lorraine and Turnford Hall. (Large Silver Medal.)

Messrs. HUGH LOW & Co., Enfield, showed plants and flowers of Carnations. (Large Silver Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, filled a large table with Chrysanthemums, having tripods of large Japanese blooms at the back, with single varieties in the foreground and vases of many of the newer Japanese kinds along the front. (Silver Gilt Medal.)

Messrs. CRAGG, HARRISON & CRAGG, Heston, Middlesex, displayed a large array of single Chrysanthemums in no fewer than 30 distinct varieties. (Large Silver Gilt Medal.)

Messrs. J. CHEAL & SONS, Crawley, Sussex, staged a collection of Apples and Pears, all well-grown produce. (Large Silver Medal.)

Royal Horticultural Society.

NOVEMBER 6.—The ordinary fortnightly meeting of the committees of this society took place on Tuesday last in the Society's Hall, Vincent Square, Westminster. The hall was by no means full of exhibits, but there was an excellent display of Orchids, and a group of Ferns from Mr. H. B. MAY, and one of fine foliage plants from Messrs. JAMES VEITCH & SONS well deserved the gold medals awarded for them.

The ORCHID COMMITTEE recommended four First-Class Certificates and seven Awards of Merit to novelties, and a Gold Medal for a collection from G. F. MOORE, Esq.

The FLORAL COMMITTEE recommended three Awards of Merit to varieties of Chrysanthemum, and similar awards to Crocus Boryi (Marathoniseus) and a variety of Capsicum annuum.

The FRUIT AND VEGETABLE COMMITTEE recommended a First-Class Certificate to Apple James Grieve, a variety which has been discussed recently in these pages.

At the afternoon meeting Mr. E. H. Wilson read a very interesting paper on his travels in Central and Western China, illustrated with lantern slides. Previous to the delivery of the lecture, Mr. Wilson was presented with a Veitch Memorial Medal by Dr. Masters, acting on behalf of the Trustees of the Veitch Memorial Fund.

Floral Committee.

Present: H. B. May, Esq. (in the chair), and Messrs. C. T. Druery, Geo. Nicholson, G. Reuthe, R. Hooper Pearson, C. R. Fielder, H. J. Cutbush, J. Jennings, C. Jeffries, Chas. Dixon, F. Page Roberts (Rev.), J. T. Bennett-Poë, C. E. Shea, E. H. Jenkins, W. J. James, W. G. Baker, J. Walker, and G. Paul.

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, showed a handsome group of stove plants, relieved with a number of showy Cattleyas and other Orchids. The group was very extensive, and was remarkable for the high culture seen in the plants, which were large specimens. A magnificent plant of Cocoloba pubescens (grandiflora) occupied a place in the centre of the display, and the corners were furnished with Aralia Veitchii, and Dracæna Victoria respectively. A row of Jacobinia coccinea found a place near the edge, which was finished with a row of small winter-flowering Begonias. Crotons, Alpinias, Aralias, Marantas, Anthuriums, Dracænas, and many other handsome foliage plants were the principal subjects of the group. A plant of Phyllotænium Lindeni, whose handsome sagittate leaves are veined with white, is deserving special mention. On an adjoining table Messrs. VEITCH displayed a number of winter-flowering Begonias. (Gold Medal.)

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, staged a group of Ferns of superior merit. The exhibit represented most of the genera of Ferns, and embraced 300 distinct species and varieties, that ranged from tiny members to large tree Ferns. A prominent position was given to Nephrolepis exaltata canaliculata (figured in the *Gardeners' Chronicle*, Sept. 15, p. 198). The curious form of Osmunda palustris var. Mayi (see fig. 65) was also represented. The group was rich in Nephrolepis, and among these were such fine things as N. Piersoni var. elegantissima, and N. exaltata superba (a grand plant). In the centre of the display was a batch of Adiantum Farleyense of remarkable culture, and overhanging these was a noble plant of Cibotium Schiedei, a handsome Tree-Fern. Drynaria quercifolia, the giant Oak-Fern, was represented by a well-grown plant, and near by was the rare Asplenium fijiense. The group reached the whole length of the building under the wall opposite the clock. We noted as especially choice, plants of Platycerium Congolense, the very graceful Davallia Veitchii, and Acrostichum linguæ (Gold Medal.)

Messrs. W. CUTBUSH & SONS, Highgate, London, N., staged a pleasing group of plants, among which were seen retarded plants—Liliums, Azaleas, Lily-of-the-Valley, &c., clumps of Ericas in variety, Astilbe (Spiræas), Skimmia japonica, with standard-trained plants of Cotoneaster buxifolia, Palms, &c., interspersed among them. Messrs. CUTBUSH also displayed some vases of winter-flowering Carnations. (Silver-Gilt Flora Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, showed choice Carnations of the popular American varieties. (Silver Flora Medal.)

Mr. C. ENGELMANN, Horneybrook Nurseries, Saffron Walden, showed vases of Carnations and Sweet Peas.

Messrs. W. WELLS & Co., Merstham, Surrey, staged a semi-circular group of Chrysanthemums of the best single varieties, and a few large blooms of Japanese varieties. (Bronze Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, displayed several interesting plants, including the curious Narcissus viridiflorus.

Mr. G. REUTHE, Keston, Kent, showed some choice Alpine and bulbous plants, and several hybrid Nerines. (Bronze Flora Medal.)

LEOPOLD DE ROTHSCHILD, Gunnersbury Park, Acton, W., displayed a hanging basket of Callicarpa purpurea, whose long growths were furnished at each node with panicles of the pretty lavender-coloured berries.

Mr. J. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, again showed small-berried plants of Aucuba vera.

Mr. GEO. H. SAGE, 71, Manor Road, Richmond, showed a very fine blue Violet, much resembling the variety Princess of Wales, but said to be of exceptional robustness and very floriferous. It was named London Market.

Messrs. J. PEED & SON, West Norwood, London, staged a large number of Alpine plants, among which were many hardy succulents.

Messrs. RICHARD SMITH & Co., Worcester, again displayed dwarf trees, shrubs, Conifers, &c.

AWARDS OF MERIT.

Odontoglossum amabile "*Celestial*."—This variety was included in a group of these plants shown by J. GURNEY FOWLER, Esq., Glebelands. There were many varieties shown, but Celestial was selected as being of great decorative value. The fruits are somewhat wedge-shaped, but often almost conical in shape, always broader at the base. The mature fruits are of deep and rich red colour, but previously they are pure white or cream coloured. In either stage they are ornamental, and in some cases fruits in either stage could be seen on the same shoot.

Chrysanthemum Buttercup.—A large, bold-looking Incurved flower of rich golden yellow colour. The florets are moderately wide, and the variety is already very popular at the exhibitions. Shown by Messrs. W. WELLS & Co., Ltd.

C. Glitter.—This variety has very deep flowers composed of somewhat short florets, and will doubtless be suitable for decorative uses and for market supply. In colour the flowers are a very rich shade of yellow. Shown by Messrs. W. WELLS & Co.

C. Mrs. Brewster.—A semi-double-flowered variety, having several rows of bronze-coloured florets, and a yellow ring round the somewhat prominent disc. The plant, as shown, was a magnificent specimen, very full of flower. It is a good decorative plant, but the blooms lack refinement. Shown by Mr. D. FAIRWEATHER, Canterbury.

Crocus Boryi [*Marathonisicus*].—This variety has pure white flowers 3 inches across, with broad, obtuse petals. The centre, which is composed of the bases of the petals, is of bright canary yellow. The style is 1¼ inch long, and has a much divided, reddish stigma. The foliage is very narrow. Shown by Mr. GEO. REUTHE.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. secretary), Harry J. Veitch, Francis Wellesley, De B. Crawshay, R. B. White, W. A. Bilney, H. A. Tracy, J. W. Potter, H. Ballantine, W. H. White, R. G. Thwaites, A. Dye, W. H. Young, G. E. Moore, A. A. McBean, F. Sander, W. Boxall, and J. Colman.

G. E. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), had one of the most extensive and elegantly-arranged groups of the year, and for which the Society's Gold Medal was recommended by the Committee. The centre was of finely-flowered specimens of Oncidium varicosum and other graceful species, and midway between the centre and each end were batches of Dendrobium Phalænopsis, showing great variety, two of the best being the pure white variety hololeuca, and the charming white and blush variety Miss Louisa Dean. Other fine effects were made by selections of rare and handsome Cypripediums, including most of the best forms of C. insigne, C. Olivia, C. Evenor, C. Maudiæ, Dendrobium superbiens, D. bigibbum, a nice selection of Cypripedium Fairrieanum grouped with some of its hybrids, and a very great number of other showy varieties.

J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. Whitelegge), was voted the Gold Medal for a very fine group, the centre of which was of white forms of Cattleya labiata, which included the varieties alba, G. G. Whitelegge, R. I. Measures, Lowiæ, Amesiæ, Penelope, Daphne, and others. The coloured varieties of C. labiata were equally remarkable, Hector and Hercules being two model and finely-coloured flowers. On each side were a fine selection of Cattleya Mantini, C. Mrs. J. W. Whiteley, and other hybrids, including fine forms of C. Fabia, C. Fabia alba, Lælio-Cattleya Decia alba, and other handsome Lælio-Cattleyas. Two of the most beautiful and richly-coloured in the group were L.-C. Haroldiana "John Bradshaw," which made a sensation when it secured its F.C.C. in 1903, and has since improved, and Cattleya Bowiana Rosita, which is a very good companion to the other variety mentioned. The unique yellow Oncidium Forbesii Bradshawiæ, the yellow Odontoglossum Lindeni, the white Brasso-Cattleya Queen Alexandra, and many other rare species were also noted.

Messrs. CHARLESWORTH & Co., Bradford, secured a Silver-Gilt Flora Medal for a very fine group rich in handsome hybrids finely grown and well flowered. Of the most remarkable were a beautiful Odontoglossum Phœbe, with a spike of fifteen finely spotted flowers; a selection of Brasso-Cattleyas, two batches of the showy Lælio-Cattleya luminosa, and similar arrangements of Cattleya Ferdinand Denis, a few choice Cypripediums, and of species and varieties a plant of the rare Bulbophyllum Remwardtii, three white forms of Cattleya labiata; Odontoglossum crispum La France, a finely formed, prettily spotted variety, and other fine Orchids.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), was awarded a Silver Flora Medal for an interesting group, in which were a good example of Vanda Sanderiana, some excellent Cattleya labiata, C. Mantini, and other Cattleyas; the beautiful Cymbidium erythrostylum, a good selection of Cypripediums, including the massive yellow and white C. Troilus, Cattleya labiata Princess of Wales, a nice white variety, Lælio-Cattleya luminosa, &c.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), was awarded a Silver Flora Medal for a pretty group, the leading plants in which were some fine Cattleya Fabia, Miltonia Bleuana "Our Queen," a very delicately tinted variety, and Odontoglossum Skinneri splendens, with a fine rose-spotted lip. The group also included a selection of Cypripediums, including Fairrieanum and two good C. insigne Harefield Hall, the dark-red Sophro-Cattleya Veitchii, and other showy hybrids.

H. S. GOODSON, Esq., Putney (gr. Mr. Davis), secured a Silver Flora Medal for a group of good Cattleya labiata, Odontoglossum grande, Cypripediums, &c., the best plants being Cypripedium Chapmani superbum, C. Maudiæ, C. Chas. Rickman, C. Memoria Moensis, and C. Niobe superbum.

Messrs. SANDER & SONS, St. Albans, secured a Silver Flora Medal for an excellent group, in the centre of which was a noble plant of Cymbidium Tracyanum magnificum, with five spikes. The forms of Cattleya labiata included several white varieties, and the hybrids were of excellent quality. Cattleya Fabia The Queen and C. Lord Rothschild alba being two white-petalled forms of great beauty. A fine specimen of Cycnoches peruvianum, a good selection of Cypripediums, &c., were also noted.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), was awarded a Silver Banksian Medal for an effective arrangement of Oncidium varicosum, Vanda cœrulea, Cattleya aurea, and Epidendrum vitellinum, set up with Maidenhair Ferns and variegated Panicum.

Mrs. SPICER showed a group of Cypripedium Spicerianum, for which a Silver Banksian Medal was given.

R. I. MEASURES, Camberwell (gr. Mr. Smith), secured a Silver Banksian Medal for a group in which were noted good Cattleya Bowringiana and its hybrids, a selection of Cypripediums, including Chas. Rickman, varieties of C. insigne, C. Chixia, C. concolor-tonsum, C. Allardianum, various Masdevallias, &c.

Messrs. J. W. MOORE, Ltd., Rawdon, Leeds, were awarded a Silver Banksian Medal for an interesting group, in the centre of which was a specimen of Vanda cœrulea with many spikes, Cymbidium Tracyanum, Aerides Lawrenceæ, and other uncommon species. The Cypripediums included a pretty and finely coloured hybrid between C. œnanthum superbum and C. vexillarium, and another distinct and pretty cross between C. tonsum and C. Godefroyæ. Good forms of C. Euryades and others were also noted, and among species a very fine variety of C. Dearei, Odontoglossum madrense, Masdevallia gemmata, M. Davisii, Stanhopea churnea, &c.

Messrs. STANLEY, ASHTON & Co., Southgate, staged a group which contained the rare Odontoglossum Duvivierianum, Cattleya Fabia alba, C. F. W. Wigan, C. aurea, C. Dormaniana, varieties of C. labiata, &c.

Messrs. HUGH LOW & Co. had a small group of fine Cattleya labiata, the variety King of Greece being white, with a slight blush tint on the lip; a nice white Dendrobium Phalænopsis, Cypripedium Milo, Westonbirt variety, and other good varieties.

Messrs. EDGAR & Co., South Woodford, had a group of Cypripediums, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking, showed Cypripedium Felicity superbum, a charming light-coloured form; C. Sheba, Westfield variety (Harrisianum superbum × triumphans), one of the darkest hybrids, with shining dark mahogany-red flowers with a white margin to the dorsal sepal; Cattleya labiata Wellesleyæ, a very large flower, broad in all its parts, bright rose with purplish-rose front to the lip; Lælio-Cattleya Kelpie (Cranstoniæ × aurea), and the fine C. × Germain Opoix, Westfield variety. (See Awards.)

Major G. L. HOLFORD, C.I.E., C.V.O., Tetbury (gr. Mr. H. G. Alexander), sent Cattleya Fabia illustris of very rich colour, C. fulvescens, and the pretty variety delicata, Cypripedium Charlesianum virginale, and two others, for which see Awards.

Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White), sent Cattleya Clarkiæ and C. Ella, both hybrids of C. bicolor, and three others, which secured awards.

JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. Bound), sent a selection of Cattleya labiata, C. Portia, C. Fabia, &c.

The Marquis DE WAVRIN, Somerghem, Belgium (gr. Mr. de Geest), showed the new Cattleya Adrienne de Wavrin (maxima × Warscewiczii).

Mr. MEERTENS, Mont St. Amand, Ghent, showed a small selection of hybrid Orchids.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Leda, Westonbirt variety (superba × aurea), from Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. Alexander). A very beautiful hybrid with finely-formed flowers of thick substance and bright rose in colour, the showy lip being ruby crimson, with gold veining at the base.

Cypripedium Germain Opoix, Westfield variety. A great beauty, only second to the phenomenal C. Thalia Mrs. Francis Wellesley, which it resembles in its perfect form and in the disposition of the colour. Dorsal sepal very large, closely set with dotted, blackish purple lines on a yellowish ground, the margin being clear white. Petals broad, tinged with purplish-brown, and bearing blackish spots on the lower halves. Lip yellowish, tinged on the face with purple.

Cattleya Fabia superba (labiata × aurea), from from Sir FREDERICK WIGAN, Bart. (gr. Mr. W. H. Young). A grand variety of a very dark colour, the lip being velvety purple with gold lines at the base.

Cattleya labiata Capt. J. F. Laycock, from Captain J. F. Laycock, Wiseton, Bawtry. Probably the finest, typical, coloured C. labiata yet shown. Flowers rich purplish-rose, the large lip ruby-purple in front with a narrow light margin.

AWARDS OF MERIT.

Cattleya fulvescens delicata (Forbesii × aurea), from Major G. L. HOLFORD. A very pretty hybrid with greenish-buff sepals and petals and yellow lip veined and tinged with purplish-brown, the front tinged rose.

Cattleya Fabia Bradshawiana, from J. BRADSHAW, Esq. A very handsome and finely-coloured variety.

Cypripedium nitens, Ball's variety, from Major G. L. HOLFORD. Upper sepal green with spotted lines of dark chocolate; upper part white.

Cattleya Mantini, Fowler's variety, from J. GURNEY FOWLER, Esq. (gr. Mr. Davis). The darkest and brightest form, flowers bright purplish-rose with maroon lip with gold veining.

Lælio-Cattleya Golden Beauty (L.-C. Ernesti × Hy. Greenwood), from Messrs. SANDER & SONS. A fine hybrid with clear yellow flowers having a ruby blotch on the lip.

Dendrobium Phalænopsis splendens, from W. M. APPLETON, Esq., Weston-super-Mare. Flowers bright magenta-rose with white bases to the segments.

Cattleya Mantiniæ superba (Loddigesii × labiata), from Messrs. J. W. MOORE, LTD., Rawdon, Leeds. A pretty form of the hybrid which originally flowered with Messrs. Veitch in 1878. Flowers of good shape, rosy-lilac.

BOTANICAL CERTIFICATE.

Epidendrum floribundum, from Sir TREVOR LAWRENCE, Bart. Flowers in erect spikes, the pure white lip spotted purple.

(Continued on page 339.)

PACHIRA AQUATICA, A STOVE TREE FROM TROPICAL AMERICA, WHICH FLOWERED RECENTLY AT GLASNEVIN.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,038.—SATURDAY, November 17, 1906.

CONTENTS.

ILLUSTRATIONS.

THE HERBACEOUS PHLOX.

IT has interested me lately to see this fine subject taken in hand as a speciality, and on a large scale, by more than one firm of florists, notably by Messrs. Gunn, of Olton, near Birmingham. Presumably, they have a suitably moist and heavy soil, with facilities, perhaps, for copious watering. Under less favourable conditions, Phloxes were scorched and starved out of recognition in the fierce and ceaseless drought of the past summer and early autumn.

There is a great deal still to be done in the development of the Phlox along its best and most legitimate lines of excellence. Hitherto the work has been almost exclusively in the hands of Continental raisers, notably of Messrs. Lemoine, of Nancy, but there is no reason why it should not be pursued in England, where there is always such a demand for improved herbaceous plants. There is sometimes a difficulty in ripening seed in a cold English August or September, but this can be met by growing single spikes under glass. The Phloxes have always been favourites of mine, and I have watched their progress with some attention during the past 25 years or so. A great many varieties have been distributed season after season, some with considerable brilliancy and purity of colour. But the advance, on the whole, has not been so large as might have been supposed, and in certain important respects there has indeed been a loss. It seems to be too readily taken for granted that a plant must be improved all round when it gets into the hands of a keen worker. But the truth is that in the concentration of effort upon some one of the attributes of a flower, other points may be effaced which contribute to make up the plant's entirety of beauty. Looking back to the early eighties, when I began to seek out the best "Phlox decussata" obtainable from Mr. T. S. Ware, of Tottenham, and other nurserymen, it seems to me that it was a better thing—speaking broadly and taking into account all its points—than it is to-day. To review some of its characters severally, in height it was a stately plant, ranging from 3 to 5 feet or more. In those days we had none of the modern dwarf race, 18 inches, or even only a foot high. As Mr. E. H. Jenkins observes (p. 222), such a Phlox as the white Tapis Blanc (see fig. 74 in *Gardeners' Chronicle* for September 8) may be useful as a bedding plant in companionship with coloured plants which demand similar conditions of moisture. But the trouble is that when raisers hit upon a greatly dwarfed seedling of a Phlox, or any other naturally tall plant, they are apt to fall in love with the small form, as a novelty, and to employ it to reduce the stature of the whole of their seedling output. Now a Phlox 4 or 5 feet high, with a dozen great spikes, is a magnificent object in the late summer border, and has not its equivalent in any other plant. No other can give a mass of salmon-scarlet or clear white at a yard and a half from the ground. But "pretty" is the comparatively insignificant word one would use of a Phlox, however vividly red or purely white, if only 12 inches high. *There is not enough of it.* It is as great an error of judgment to reduce a Phlox to this pigmy size as it would be to shorten a Delphinium or a Foxglove to a few inches. In Messrs. Gunn's catalogue, probably the best and most complete of modern Phlox, out of 113 varieties, 61 are under 3 feet and only 10 over. Thus not only a few varieties, but the whole race has suffered this dwarfing process. The panicles of the older Phlox were deeper—the tendency now is towards a flatter, shallower head—and the stem for some way down threw out charming little successional sprays of bloom, which lengthened the season and were most useful for cutting. To give an instance, the comparatively new white variety Mrs. E. J. Jenkins has this excellent habit, and is proportionately more valuable than the more massive Sylphide with its one broad head of finer flowers. But the greatest loss of all is that of the shining black stem which used to be associated with the richer reds. I cannot now buy a Phlox with this stem, though I have it in some of my own raising. Twenty or more years ago I obtained from Mr. T. S. Ware a variety named Triomphe du Parc de Neuilly, a lovely thing, with coral-salmon flowers of an exquisite tone, and very dark, polished stems. Such a flower as this seemed a promising element in breeding, and I found it readily transmitted its qualities. Unfortunately, a run of dry summers, on the hot chalk soil of my former home, forced me to abandon the cultivation of Phlox, and in course of years both the original and most of its seedlings disappeared. It is strange that the French raisers, who would be thought to have an eye for the beauty of such a feature, should have thrown away the dark stem and put the enhanced orange-scarlet of flowers like Etna and Coquelicot on plants with coarse green stems and leaves too pale to accord with the bloom. Colour is indeed all that these varieties can claim, for Etna has poor, scanty panicles, and the much-praised Coquelicot has a flimsy flower of very bad shape. An individual Phlox flower should be very slightly reflexed, with thick, much overlapping petals, whereas Coquelicot is somewhat cupped, with thin, ill-formed petals. Its colour, too, to my eye is harsh, and wanting in the delicacy of tone of some of the older Phloxes, which did not strike the eye so much. The most desirable colours in the Phlox, that is to say, those that are most valuable because scarcely to be found in other herbaceous plants, are difficult to describe. The nearest one can get is to say they are compounds and links between scarlet, orange, pink, and salmon. The terms "coppery" and brick-red are also fairly descriptive. Messrs. Veitch's series of Javanese Rhododendrons present something of the same delightful range of colour. There is scarcely a pure dark red; the old Coccinea is the best known to me. Whenever I meet the epithet "crimson" in a list of Phloxes, I always suspect at least a tinge of the unpleasant magenta. The purples and so-called blues are one and all impure in colour, and are also common and not distinctive—i.e., can be found abundantly in other herbaceous flowers. It is true that tastes in colour differ, but it is also true that there is such a thing as a positively bad colour in a flower. In my judgment, coloured Phloxes with white centres are a mistake. They are fashionable with the French raisers, but this inverted colouring gives a weak and washed-out appearance to the spikes. Pale salmon-pinks, really pure, with no trace of blue, are rare and desirable, and quite self-coloured flowers without darker eyes would be effective and an acquisition. A yellow herbaceous Phlox is a possibility. I once had a single flower of pure and very beautiful yellow on a truss of one of my own salmon-pink seedlings, but though I self-fertilised it and used every grain of its pollen to cross other suitable flowers, nothing came of it. It is difficult to get seed from the advanced scarlets and salmons, the whites for the most part seed readily. The most beautifully pure white known to me is Amazone, but it is not tall enough. Sylphide is very fine, having a great truss of very large, solid flowers, remarkably stout in growth with dark foliage. But an occasional plant will have all its flowers stained with pink, and it makes few side shoots. It is a fault that too many of the best white varieties are too early to flower with the coloured; good late whites are wanted. Another mistake has been the aiming at too dense a spike, so that the flowers crowd one another and the spike cannot clear itself of water in wet weather. The white La Fiancée and the otherwise good pink Lady of the Lake are instances.

PROPAGATION.

The best routine of propagation is to strike short, stout cuttings in March, plant them out in reserve beds of rich soil when rooted, and move them to permanent quarters in September. In light soils they will not stand more than three years, but in cool, heavy soil,

with ample surface-food, I have had five-year-old clumps giving such a mass of splendid bloom as cannot be obtained from younger plants. Phloxes will flower to perfection in situations where they never see the sun at all, and this is the only way to keep the vivid but fugitive salmon-scarlets from bleaching—an inseparable defect of their quality. It is a pity that the badly-named Phlox suffruticosa—the name is much more appropriate to the larger Phlox decussata—has almost disappeared from our gardens and nurseries. The probable reason for this neglect is its still greater impatience of drought and its earlier season, bringing it more into the heat of summer. But the refined wax-like texture of its flowers, especially in the white varieties, makes it well worthy of care in our cooler soils. *G. H. Englehcart.*

FRUIT REGISTER.

EARLY DESSERT APPLES.

I HAVE not noticed that either of your correspondents have mentioned Mabbott's Pearmain. This I find a very prolific variety, of a suitable size either for market or private consumption, handsome appearance, good flavour, and what many now prefer, soft-fleshed. This is in excellent condition during October. It follows James Grieve, and is in turn followed by Cox's Orange Pippin, thus bridging over what is sometimes an awkward period in keeping up a regular supply for dessert. I am not sure whether James Grieve will not be more satisfactory on the crab than on the Paradise stock, unless the nurserymen confine themselves to the one kind of Paradise stock. Worcester Pearmain has colour to recommend it, but beyond that one

FIG. 133.—NEPETA VEITCHII, SHOWING THE LEAVES.

may go into the Devonshire orchards and find a sweet cider Apple equally good. Wealthy is fit for use during October, but is too acid for many. It crops well, and the fruits colour well. *T. H. Slade, Feltimore, Exeter.*

——I think that your correspondents (see pages 249 and 920) will find all that they require in September Beauty, an Apple very like in appearance and quality to the good old Ribston Pippin. The tree is a good bearer and clean grower, and the fruits ripen in the last half of September and the first half of October. It is catalogued by Messrs. J. Veitch & Sons, but I cannot find it in any other lists that I have by me. *Fredk. Bedford, Straffan House Gardens, Co. Kildare.*

——The late Mr. Harrison Weir stated in a letter to the *Gardeners' Chronicle* (vol. xxxvii., page 124): "Some people prefer an acid or semi-acid Apple, others one that is less so, while a large number give preference to varieties that are sweet, and not a few like what is termed a pine flavour." When reading the recent notes on "Early Dessert Apples," the opinion then expressed came to my memory. Are there not Apples which ripen in September possessing the flavour, and in some cases the colour, to suit the most fastidious? It is true that locality, soil, &c., have an important bearing on this question, and trials of the various kinds cannot always be undertaken, but the following Apples ripen in September, possess a distinct flavour, and have been pronounced excellent individually:—Akero syn. Okera, Duchess's Favourite, Devonshire Quarrenden, Kerry Pippin, Langley Pippin, Red Astrachan, September Beauty, Worcester Pearmain, William's Favourite, and Yellow Ingestre. Care must be taken when purchasing Yellow Ingestre that a true stock be obtained. *C. R.*

NEW OR NOTEWORTHY PLANTS.

NEPETA WILSONI, DUTHIE N. SP.*

A HARDY herbaceous perennial, 2 to 2½ feet high, with crenate leaves and large, handsome, dark blue flowers arranged in distant clusters. Its affinity is with N. macrantha of Fischer, from which it may be distinguished by its crenate leaves and much broader bracteoles. It was introduced by Mr. E. H. Wilson from Sungpan, in the extreme west of China, and flowered at Coombe Wood for the first time in August, 1905. (*Hortus Veitchii*, p. 425.)

NEPETA VEITCHII, DUTHIE N. SP.†

A HANDSOME herbaceous perennial, with crenately dentate leaves and large light blue flowers arranged in distant clusters. This plant is very similar both in habit and foliage to specimens collected by Souhé (No. 918) near Tongolo, in E. Tibet, during the year 1893. In the latter, however, the leaves are more distinctly crenate, the flowers are smaller, and the bracts are proportionally much broader. N. Veitchii was raised at Coombe Wood from seed collected by Mr. Wilson in Western China. The accompanying illustrations are from photographs kindly taken by Miss Temple, at Kew, from a living specimen.

* NEPETA WILSONI *n. sp.* Herba perennis 3-4.5 dm. alta. Caules acute quadrangulares, angulis puberulis, saepe purpurei. Folia 6-3.7-6 cm. longa, 2.5-3.2 lata, breviter petiolata, superiora subsessilia, ovato-oblonga, obtusa, basi truncata vel rotundata, margimbus late crenatis, supra subglabra, subtus pallida et puberula; costa venisque prominentibus, rubescentibus. Flores violacei, in verticillastros distantes dispositi, breviter pedicellati. Bracteae inferiores foliaceae, sursum minores, apice basique acutae, margimbus integris. Bracteolae oblique elliptico-lanceolatae, acuminatae, calyce breviores, margimbus ciliatis. Calyx bilabiatus, 1.3 cm. longus, dense pilosus, labio superiori breviter 3-fido, inferiori ad medium 2-fido. Corolla circa 2.4 cm. longa, tubo erecto, basi alho, sursum curvato, superne amplato, labio superiori 2-fido, lobis lateralibus rotundatis, terminali suborbiculari, emarginato, margimbus reflexis, medio elevato, piloso. Stamina superiora paulo exserta, filamentis glabris, antheris demum divaricatis. *J. F. Duthie, Kew.*

NEPETA VEITCHII, *n. sp.* Herba perennis, tota pilis minutis subhispida; caules usque ad 18" poll. alti, acute quadrangulares. Folia decussata, infima petiolata, superiora sessilia, 2.5-4.5 cm. longa, circa 1 cm. lata, anguste oblongo-lanceolata, acuta, basi cordata, margimbus valde crenato-dentatis, summa rugosa, subtus prominenter reticulata. Verticillastri 6-7 flori, internodiis inferioribus 4.5-5 cm. longis. Bracteae inferiores foliaceae, sursum minores. Bracteolae setaceae, calyce breviores, 1-nervia. Flores manifeste coerulei. Calyx 2.3 cm. longus, ad medium bilabiatus, tubo 15-nervis, lobis anguste lanceolatis, apice setaceis, margimbus ciliatis. Corolla 2.8 cm. longa, lateraliter compressa, tubo 1.9 cm. longo, deflexo, superne amplato, labio inferiori 3-lobato, lobis lateralibus rotundatis, terminali medio elevato, apice late emarginato. *J. F. Duthie, Kew.*

COLONIAL NOTE.

UNMATURED POTATO SEED IN INDIA.

INDIA probably affords in this matter of unmatured Potato seed the greatest example of the axiom that "necessity knows no law."

Within 50 miles of the railway down at the foot of the Kumaon Himalayas is a large scattered area largely devoted to Potato culture; indeed, so first-class are the profits on this crop compared with any other, and so liable are the prices to go very low, and to rise to magnificent proportions, it is the one

FIG. 134.—NEPETA VEITCHII IN FLOWER.

crop grown in these parts about which there is extraordinary keenness, and no small amount of speculation. Here is a brief example. Only yesterday 45 mules arrived here, the previous understanding being the buyer was coming for Potatos at Rs.2-8 per maund, say, 3s. 4d. per 100 lb.; but the market is rising, so my seller is given a hint, the mule men have come 25 miles, an Indian altercation takes place—a very characteristic affair—words flow, mules go half a mile, a halt is called, another conference—and a good smoke—during which time they all sit down in the road; result, after two hours vigorous parley, Rs.2-10-9 per maund. It takes an Englishman a quarter of a lifetime to understand the finesse of dealing with the very astute Indian.

At this time of year innumerable ponies, mules, donkeys, and coolies are incessantly on their way up and down the hills for about six weeks, all taking Potatos down to Haldwani, a small town some four miles below the foot of the Himalayas. The aggregate of these amount to a lakh or two of maunds (a lakh is a hundred thousand, and a maund of Potatos, that is, Haldwani maund, is 100 lb.).

While it remains a fact that the bulk of these Potatos are for consumption, it is yet true that many hundreds of maunds are sold for "seed." It is likewise true that October is the great month for digging up in the Himalayas, and also the great sowing month on the plains, and that, too, with these self-same Potatos. They go direct from the Himalayan field to be sown on the plains field, and a matured seed Potato, as understood in England, is quite an impossible institution—that is, on the plains of India. Here in the Himalayas, with a climate which much more closely approaches a mild West of England clime than that of the rest of India,

we get the matured Potato and plant in April much as in England.

These October-sown Potatos come to maturity on the plains principally in February, and while they do not produce such a large crop, and the tubers and quality are not equal to the Himalayan-grown Potato, nevertheless Potato culture on the plains from hill seed is quite a success.

But such are the hot season and the subsequent monsoon on the plains, that up to this date the plains Potato-grower has wholly failed to save seed for succeeding year from plains crop, and it is quite certain that every mountaineer Potato-grower is ready to respond, "Amen, so let it be," for in his inability to save "seed" depends the permanent demand on the mountains for many tons of Potatos annually.

It is a remarkable circumstance that while we have a marvellously forceful period of full three months—July, August, and September—during which time the rainfall is enormous, and vapour dense and prolonged, my own estate enjoys one of the smallest rainfalls in the province, as during these three months it was 40 inches, while the town of Naini Tal, 14 miles away, had in the same time upwards of 100 inches, yet the real Potato disease is unknown here.

By far the worst evil is supertuberation, due in nearly all cases to delayed monsoon, or erratic seasons.

I would draw the particular attention of Potato experts to the fact that something more than rainfall, and moisture in abundance, are necessary to establish these, and these alone, as the great predisposing causes of the disease. We have a vastly greater and continuous rainfall for three months, with dense vapour prolonged for many days together, veritable cloudland, but no Potato disease!

At the same time important differences should be noted. During this period the temperature rules high by day, and about 60° by night; the elevation is great, and possibly the density of vapour is less than in sea-level countries. But the main fact to which I personally attach much importance is gradient. There is no such thing as water-logged soil, drainage is everywhere perfect, so much so in fact that after, say, a 6-inch rainfall, the next day will afford no visible evidence of any such fall: it simply rained the previous day. The mountains summarily reject all excesses of rainfall. Hence, after heavy rain, the surrounding ravines roar like distant thunder, with rushing waters from the mountain slopes.

I suggest herein is the great matter. The dominating cause of [the growth of the fungus causing] Potato disease is, in the main, a question of drainage, far more than of atmosphere; and I suggest to those having land with gradient to try experiments, running the Potato lines with the gradient, and never across it or obliquely; earth up well, and see the results. For example, the Welsh mountains should grow Potatos wholly free from disease, that is, if sound Potatos are planted to begin with. *F. W. Sears, Hasia Dunga, viâ Naini Tal, India.*

AUTUMN CROCUSES.

By autumn Crocuses we do not mean Colchicums, which are often so called, but true autumnal flowering Crocuses. Many of these are, or were till lately, in great beauty in the open air at Kew, but bearing in mind the uncertainties of the climate in November, it would seem preferable to grow them in a cold frame. All the species were monographed in these pages both by Mr. Baker and Mr. George Maw. The last-named botanist eventually published a superb monograph of the genus with 67 coloured plates.

CROCUS HADRIATICUS.—A white flowered species native of Greece and Albania. The leaves are ciliate at the edges. Maw (tab. 30), though retaining the specific name, says he cannot distinguish it from C. sativus except in the colour of the flowers, but there are white forms of sativus growing at Kew.

C. CANCELLATUS.—A species of wide oriental distribution, great altitudinal range and consequent great variation in colour, whence several varieties, or, as some would say, species have been enumerated. The typical form is blue. Maw, tab. xxxib.

C. TOURNEFORTII.—A Grecian species with lilac flowers. The stamens are densely pubescent thus offering a point of distinction from C. Boryi.

C. ASTURICUS, a common species in the north of Spain, with flowers very variable in colour, ranging from lilac, deep purple, or pure white.

C. CLUSII is also a Spanish species extending into Portugal. The rich red papillose seed, says Maw, serves to distinguish it from any other west European species.

C. OCHROLEUCUS, a native of Syria, with flattish corms and cream-coloured flowers. Maw, tab xi.

C. LONGIFLORUS, a native of southern Italy, Sicily, and Malta; distinguished from C. sativus by its glabrous leaves and red seeds. Maw, tab xxviii.

C. BORYI MARATHONISEUS.—Crocus Boryi is a Grecian species, flowering in late autumn, and producing whitish flowers, with much divided, orange-coloured stigmas, longer than the anthers. In the variety marathoniseus, according to Mr. George Maw, the stigmas are less divided, and do not usually exceed the anthers in length. The transverse section of the leaf shows the margins of the leaf recurved, and a midrib very prominent but flattened on the under surface. Our illustration was taken from a specimen exhibited by Mr. Reuthe, of Keston. For full details we refer to Mr. Maw's paper in *Gardeners' Chronicle*, vol. xvi., p. 559, and especially to his Monograph of the genus Crocus (1886), p. 241, tab. 47b.

FIG. 135.—CROCUS BORYI MARATHONISEUS: FLOWERS WHITE.

KEW NOTES.

THE GREENHOUSE AT KEW.

MOST of the varieties of Chrysanthemums are well-known decorative kinds, practically all the sections being represented. Some of the bushes of the single, pink variety Ladysmith must be nearly 6 feet through. Specimens of Soeur Melanie, Ryecroft Glory, James Salter, Source d'Or and La Triomphante are almost, if not quite, as large. Most of the plants are naturally grown bushes, and very little disbudding has been done. Dotted here and there amongst them are seen examples of the beautiful blue-flowered Salvia

azurea grandiflora (syn. Pitcheri) and Cosmos bipinnatus. The latter plant is naturally late in flowering outside, but grown in pots it is very useful for the cool greenhouse. The plants average 6 to 8 feet in height, and have rose, purple and white flowers. Two large standard plants of Sparmannia africana, already well clothed with flowers, from the quantity of buds visible, give promise of continuing effective for some time to come. The giant Groundsel, Senecio grandifolius, is conspicuous with its very numerous golden-yellow flowers, forming a head 18 inches to 2 feet across. Readily propagated from cuttings in spring, the plants can be plunged in pots outside in summer, until the flowers commence to open usually towards the end of September.

Probably the most interesting plant in the house just now is Montanoa (Montagnea) mollissima represented by a specimen 10 feet in height. A handsome shrubby Composite from Mexico, the ray florets are white and the disc florets yellow. Judging from the habit and free-flowering qualities, it should be a good plant for cultivation in large conservatories. The specimens in a group of Cassia corymbosa growing in 5-inch pots; average 18 inches to 2 feet in height. Each plant has two or three growths terminating in corymbs of yellow flowers. Raised from seeds last year, the plants were cut back to within 3 or 4 inches of the base in spring. Towards the end of July the pots were half plunged in ashes in the open air and liberally supplied with manure water. The orange-red flowers of Leonotis Leonurus are very prominent on one of the side stages with a groundwork of Begonia Knowsleyana. Tecoma Smithii is represented by good heads of tubular yellow flowers. Growers often fail with this species, because the plants do not perfectly mature their growths. A rich patch of yellow is furnished by Jacobinia chrysostephana, quite a contrast to another member of the same genus close by, namely J. Ghiesbreghtiana with less conspicuous, red flowers. Lindenbergia grandiflora is a pretty Himalayan plant with numerous axillary, yellow flowers. The white variety of the Willow-leaved Angelonia salicariaefolia succeeds well treated as an annual. The half-hardy perennial Saxifraga Fortunei with its light panicles of white flowers and dark green leaves is growing in 5-inch pots. The re-introduced Buddleia asiatica has very fragant flowers, thickly arranged on long racemes. The following species and varieties of Ericas are in flower here. E. mammosa, E. gracilis, E. conspicua, E. verticillata major, E. melanthera, E. hyemalis, and the variety alba. *D. D., November 7.*

NERINES.

These lovely South African bulbs constitute a genus of beautiful and desirable plants. There are not more than a dozen species, but varieties and hybrids are numerous. They are all natives of the Cape, excepting N. japonica, syn. Lycoris radiata. Some may be grown in the open air in the warmest parts of the country, such as the well-known N. sarniensis, or "Guernsey Lily." One chief point of value in Nerines is that they flower during the autumn. Their colours are vivid, and range from the most brilliant scarlet, through rose and pink, to the most delicate tints. Their requirements are easily afforded, but, unlike a good many bulbous plants, they make their growth during the dark days of winter, and should therefore be afforded all the light possible at that time. After the flowering period, which is during September and October, the plants should be grown on shelves near the glass, in a cool, well-ventilated house, facing due south, having an atmospheric temperature at night of 45° to 50°. Watering should be judiciously done during the last two months of the year, one or two applications each week being quite sufficient for their requirements; but with the turn of the year and brighter days they require looking over every other day. When they commence to show signs of decay, water should be gradually withheld. While at rest the plants should be cleared of all dead foliage and placed in frames in the full sun, baking them all through the summer months, keeping them entirely without water until the flower scapes appear, which will be at about the middle of August. Any potting that is necessary should now be taken in hand, shaking the roots free from all the old soil, and replacing it with good fibrous loam and sand. Use comparatively small pots, a pot-bound condition being favourable for the production of flowers. This operation provides an excellent opportunity to clear the bulbs of any pests that may infest them, mealy bug being the most troublesome. Stand the plants, whether repotted or not, in pans containing water, allowing them to become thoroughly soaked, afterwards placing them in the glasshouse to flower. All the species may be crossed freely with each other, and advantage should be taken of a sunny day for pollinating the flowers. When the seeds are ripe they should be sown in a light, sandy compost, in pots containing good drainage, only affording the seeds a very slight covering. Stand the pots in an atmospheric temperature of 70°, and afford water freely to the roots till growth is well advanced. Prick off the seedlings into pans or pots filled with a similar compost, after which place them in an atmosphere of intermediate temperature well up to the glass. Young bulbs usually flower when four to five years old, whereas, if one has a frame in which frost is excluded, planting out the young bulbs in a good light soil would, no doubt, bring about a stronger growth and the plants would flower at an earlier period than if kept in pots.

The accompanying illustration (fig. 136) shows Nerine flexuosa alba, which belongs to a distinct group, differing from the N. sarniensis type in having small and differently shaped flowers. The plants were treated as described above, and not as evergreens, as in some establishments. *G. H. Banks, Botanic Gardens, Cambridge, October 30, 1906.*

Fig. 136. Nerine flexuosa var. alba.

VEGETABLES.

ONION CULTURE.

In reference to *A. D.'s* note, p. 305, I recommended, when lecturing some few years ago, the culture of autumn-sown Onions to market-gardeners. I knew that they grew a large quantity of these Onions, but all were pulled up when they were green, and my advice to them was that they should leave some to mature, as large Onions were in demand, and were largely imported. Some of the members of my audience gave significant nods to each other, which I took as signs of approval of my remarks, but I afterwards learned that they were smiling at my ignorance, for the growers had found to their sorrow that persons refused to purchase these home-grown Onions, whether spring or autumn sown. They prefer those grown in Brittany or in Egypt, for they contend that these are milder in eating. Is this due to climate or to the variety? In this part growers sow the white Lisbon variety, the bulbs of which are white, and for that reason sell readily in the market. These Onions are dibbled into the ground, and the growers are not particular if they drop two or three plants into the same hole. By this manner of planting they are said to winter well. Tons of this vegetable also come from other parts of the country, for Onions are hawked about before our Lancashire bulbs are ready. *W. P. R., Preston.*

POTATO SEED-TUBERS FROM IRELAND.

The trials of Potatos undertaken by Messrs. Sutton & Sons at Reading have attracted widespread attention. The comparative trial of South of England, Lincolnshire, Scotch and Irish-grown seed seems to be regarded as the most important and far-reaching of the series.

Having had the honour of contributing the Irish seed of five out of the eight varieties tested, four of which came out "on top," and having been unable to accept Messrs. Sutton and Sons' kind invitation to be present at their demonstration when the facts could have been stated, I beg to ask your kind permission to make the explanation now.

The "seed" of Up-to-Date supplied had been

grown here for the three previous years, that of Duchess of Cornwall, King Edward VII., and British Queen for two years, and Sutton's Ninetyfold (seed direct from Sutton's) for one year.

The following table of results may prove of interest:—

	Irish. lbs.	Scotch. lbs.	Lincolnshire. lbs.	South of England. lbs.
Up-to-Date	172	76	100	33
Duchess of Cornwall	112	101	85	27
Sutton's Ninetyfold ...	98	65	53	10
King Edward VII. ...	81	59	59	22
British Queen ...	165	130	111	58
Totals	528	431	408	150

The supremacy of the Irish-grown seed in this unquestionable test, supplemented as it has been by similarly marked success in other English trials, notably those of the Harper-Adams Agricultural College in 1906, and of the Surrey County Education Committee in 1905 and 1906 (for both of which I also supplied the Irish seed), is a factor of much importance to Ireland.

Irish farmers should, in the words of the *Farmers' Gazette*, now turn their energies to the great market for the dispersal of large quantities of sound, reliable Potato "seed" which lies open before them, and it is entirely dependent on their own tact and enterprise whether they shall go in and take possession of the advantages offered.

As was wittily said at the Sutton demonstration, "The Irish growers have the ball at their feet if they had only elbow grease enough to kick it."[!]

Unfortunately for the average Irish farmer, there appears to be only one Potato—the worn-out Champion. This, in spite of constant and widespread failure, he still clings to, and he will doubtless continue to grow it long after it has caused his death from starvation [!] *J. F. Williamson, Summer Hill, Mallow, Co. Cork, November 9, 1906.*

HOME CORRESPONDENCE.

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

RAINFALL AT LEONARDSLEE.—During the month of October, the rainfall was 4·50 inches, and during the present year 21·86 inches; from November 1 to November 8, 3·17 inches have fallen. In October, 1905, the rainfall was 1·41 inches, and for the year 18·13 inches. *W. A. Cook, Leonardslee, Sussex.*

RIVERS' CONFERENCE PEAR is now in use and comes in well between Souvenir du Congrès and Pitmaston Duchess. It flowers later than most varieties and sets a fair proportion of fruit. It is of excellent flavour and has flesh of a deep reddish colour. Here, at an altitude of 300 feet, we have had a good crop of Pears. The rainfall for the month of October measured 4·96 inches. *Wakefield, Yorks.*

COLOUR IN APPLES.—*D.* (p. 295) when raising the question of the merit that colour possesses in a culinary Apple, might have gone a step farther and made the same inquiry in the case of dessert kinds. In both instances this skin-deep beauty is about the first thing to be discarded before the fruit is eaten, and everyone knows that a greenish-coloured fruit of Blenheim Pippin is excellent in eating. In judging Apples, however, colour in all classes should, I think, be taken into account, just as the "bloom" on the Grape and the "netting" on a Melon merit attention. Generally the external appearance of a fruit is an evidence of good cultivation, and in Apples it may be due to the influence of stock, soil, or locality. Growers in districts where fruits do not usually colour well are handicapped when in competition with others from districts where high colouring is general. In such a case, and at a great fruit show, two sections of a given class would meet the objection: for example, Cox's Orange Pippin (*a*) and Cox's Orange Pippin (*b*), the colour being regarded in the one class and disregarded in the other. *E. H. Jenkins.*

RE-NAMING VARIETIES OF AMERICAN CARNATIONS.—I may remind *New Yorker* (p. 314) that, although the flowers of Carnations may be identical in colour and in general build, it does not prove them to be of the same variety, since the habit of growth in the two plants may be, and often is, quite distinct. As to the new variety Mrs. W. T. Omwake and Rose Enchantress *New Yorker*, while blaming the importers for this so-called renaming, seems to be unaware of the fact that certain of the American horticultural journals freely advertised the variety for some weeks, and some growers on this side of the Atlantic bought it under the two names and now, at flowering time, they are discovering them to be one and the same variety. It is obviously a case of sporting in several districts spontaneously and hence different names have been given. I believe Enchantress has sported, not only in America, but in Guernsey and in England, a case in point being White Enchantress and Ivor White, which are identical. Royalty and Fascination (not Fascinator) are not parallel instances, for these were, I believe, renamed by market growers. To show that British firms have some sense of just dealing, I may instance that Messrs. Cutbush, in their new Carnation list, cite Mrs. W. T. Omwake as "a deep pink sport of Enchantress." Could anything be more clear than this? although the firm adheres to the name under which the variety was imported. *E. H. Jenkins, Hampton Hill.*

——— Mr. Engelmann's letter (see p. 328) certainly enlightened me respecting Carnation Mr. W. T. Omwake, but I "guess" he is wrong when he calls Rose-pink Enchantress no good. The true sport is undoubtedly the finest Rose-pink Carnation existing as yet, and is being bought in thousands by the Chicago growers, but it only proves the foolishness of English growers buying from stocks they know nothing about, and from firms they never hear of again. Further, Mr. Engelmann displays lack of information by classing Mr. W. T. Omwake (as grown in England) with Helen M. Gould. I have seen the latter on show, also growing at home. It is a winner. If Mr. Engelmann's stock of Enchantress has thrown off twelve sports, he can "calculate" that it is a very poor one, and I advise him to change it, but he will find that many of his so-called sports are not fixed. My main object in writing was that the raiser of Victory may be given fair play, and if it eventually proves that St. Louis and Victory are identical, could not the Royal Horticultural Society step in and prevent the use of the second name? No one would think of robbing a famous artist of the credit for painting a great picture. *New Yorker.*

AN APPEAL TO CHRYSANTHEMUM LOVERS. At the banquet given to the Jury and Officials of the French N.C.S. at Caen, M. Philippe Rivoire announced that while at Marseilles he had learned that the two grand-daughters of M. Blancard were living in London, and were in a state of pecuniary distress. There is no need to remind the readers of the *Gardeners' Chronicle* that we owe the introduction of the large-flowering Chrysanthemum to M. Blancard, who in 1789 imported it from China into France. Considering the enormous success of this flower in England during the time that has elapsed, I am sure there must be many growers and admirers of our popular autumn flower who would like to spare a trifle to help these two ladies. The French N.C.S. started a subscription list with 100 francs, which will be supplemented by other donations on the part of French Chrysanthemum growers and admirers. M. Rivoire has asked me if I will interview the ladies later, and I have promised to do so, as they are living in London. This is a matter that will be brought before our own National Chrysanthemum Society in due course, but if there are any readers of the *Gardeners' Chronicle* who are not members, but who would like to help these ladies no matter in how small a way, I should be extremely glad to hear from them, or to receive any contributions they may like to send me. *C. Harman Payne, 141, Wellmeadow Road, Catford, S.E., Foreign Secretary, National Chrysanthemum Society.*

WILLOWS.—Mr. Adams (see page 327), is no doubt right in advising that the close-barked Willow only should be used, as, without doubt, at the present time it is much more valuable than any other variety, but I fear he must be wrong in stating that Willow of this class realises from 12s. 6d. to 15s. per foot cube. Never having been able to obtain anything approaching this figure when selling this class of timber, and now having some to dispose of, I should be only [illegible] to learn of so desirable a market. Again, from my experience, he is wrongly informed when stating that the open-barked Willow is used only for cricket bats, as it is the close-barked or white Willow that makers of bats are so keen in obtaining and who will only give a very poor price indeed for the other variety. I believe, when planting, if young trees, say from 10 to 15 feet in height, grown from small cuttings could be obtained they would be far preferable to sets. *George Wood, Brandon.*

POTATO TRIALS AT WISLEY.—With a desire to see trials of Potatos at Wisley conducted on a much wider basis than now exists, the six hitherto conducted there and at Chiswick being limited to a test of varieties only, I suggested at a recent meeting of the Fruit and Vegetable Committee that the Council of the Royal Horticultural Society be invited to have at Wisley a series of trials of Potatos relating entirely to the results seen in planting tubers of the same variety derived from diverse localities, and Mr. Wright said the matter should have full consideration. This question of the effect of planting seed-tubers from Northern, Irish, and Midland soils here in the South is of first-class importance. My own limited trials have shown it so conclusively that for the moment the matter holds first place in Southern Potato commerce. I trust that not only will the Council sanction the proposed trial, but will also authorise Mr. Wright to obtain seed-tubers of not fewer than twelve varieties which may have been grown at Wisley this year, and of which some thirty tubers of each can be saved for planting, getting duplicates of these varieties from both the East and West coasts of Scotland, from Yorkshire, Essex, and Ireland, and using those of his own sowing from the Wisley sand. Ireland must be on no account left out of the trial, because tubers from that country are found to have first-class reproductive powers. With respect to the planting of immature or unripe tubers, and mature or ripe tubers of similar varieties, as a farther trial, that cannot be done at Wisley next year, the immature tubers not being available. But were, say, a dozen tubers of as many of the varieties from Scotch or Irish seed planted separately from the former trial to be lifted whilst still immature and the tips green, then the farther trial could be carried out the following year on lines of the utmost fairness. In both these matters the Wisley Potato trials would have interest of the highest importance for all concerned in Potato culture. *A. D.*

THE MARKETING OF FRUIT.—The announcement by the Swanwick and District Fruit-growers' Association (Hants.), that one of the chief objects of its existence is to check the alleged "unreasonable dealings of salesmen," has brought forth a letter of remonstrance from Mr. W. B. Shearn, vice-president of the London and Provincial Fruit Buyers' Association. Mr. Shearn writes:—"I should like to point out to the fruit-growers their own unreasonable mode of dealing, in the strawberry season especially, when they send their strawberries in eaten-weight baskets instead of using baskets of an average weight, as they have been asked to do for years. The baskets they send hold from 2½lb. to 6lb., and that is where the unreasonableness of it comes in, as the grower who sends the 2½lb. basket expects as much money returned as the one who sends the 6lb. basket." The foregoing letter bears out in a remarkable degree the remarks contained in an article entitled "The Strawberry Crop"—and which referred to this particular district of Hampshire—published in the *Gardeners' Chronicle* of July 28 last (pp. 72-74). The passage in question ran as follows: "If the Hampshire grower could improve his methods still further by using baskets of one uniform size with a guarantee to the salesman and the subsequent purchaser as to the nett weight of the fruit, the kind of package he employs could hardly be improved upon." It is indeed a great pity that the English fruit-grower cannot bring himself to adopt more careful methods in his business. In this respect he has much to learn from the foreigner, who learned long ago that his chance of disposing of his goods at satisfactory prices depended a great deal upon the manner in which those goods were marketed. The English grower, on the

other hand, often seems to think that it does not matter in the least how he sends his fruit to the shop or the salesman, the outcome of which state of affairs is a feeling of mistrust between grower and distributor—a feeling which extends to the customer when he finds that he is more often than not buying a "pig in a poke." The customer likes to know the quality and quantity of what he is buying, but he is often very much in the dark in both these respects when he purchases fruit put up in growers' original packages, as Strawberries from the Swanwick district usually are. It is as bad a policy to give short weight as it is to put the inferior fruit underneath and the good on the top. A salesman will naturally be more pleased to handle fruit which is carefully graded and carefully weighed, because the sale of such fruit is easy and entails little trouble in handling. Growers who are particular in these respects will therefore get the top prices of the market, and their fruit will be sold first, while the improperly-graded and short-weight consignments of others wait until the majority of the salesman's customers are satisfied. Fruit packages of this latter description are profitable neither to the producer, the salesman, the retailer, nor to the eventual purchaser. It is very evident therefore that while the British fruit-grower may have many grievances, the remedy of which is quite outside his power, the salesman has similar reason for complaint against the producer. And the sooner that every fruit-grower realises that it pays to be especially careful in marketing his fruit, the better will it be for the reputation of British fruit generally. Above all, it will do more than anything to keep the foreigner out of our own markets. We should, at least, not be too proud to learn for ourselves what he has been teaching us to do ever since he invaded the markets of Great Britain. *East Sussex.*

THE PREVENTION OF CORRUPTION BILL.—As a 45 years' subscriber without a break, perhaps you will allow me to join *A. T.* and *J. F.* in protesting in this matter, now that some your correspondents, like *A Briton*, for example, have had their say. I am neither going to condemn nor defend the discount practice, but I protest against the conspicuous manner in which gardeners and other private estate employees have been dragged into notice in the Parliamentary discussion of the Bill, and by almost every paper that has discussed the subject, as if they were the greatest and only sinners, whereas, probably, their share in the business has been infinitesimal. Gardeners' average salaries are, if anything, below the living wage figure, and probably no class stands more in need of the discount on their comparatively insignificant purchases, or are to be more excused for accepting it. Gardeners who accept discount are, at any rate, in first-class company. The practice pervades nearly all industries. The poor gardener and nurseryman "cannot hold a candle" to the big manufacturer and his customers. What would you say of a pair of pomes, worth a hundred guineas each, and a carriage, given in the expectation of favours to come or already had, in the way of discount, or of cellars stocked with wines on the same principle, probably without the word "discount" ever being uttered? These are samples of what happens, and could be vouched for, between vendors and purchasers of "materials" for certain nameless departments and contracts. I am not personally concerned in such transactions, but the facts are common knowledge in certain quarters, and I am sometimes so placed that I cannot help knowing of them or being told. Indeed, Chambers of Commerce have often alluded to such things at their meetings. I am not pleading justification, but I am a gardener—an honest one, I hope, and have been disgusted at the way in which the gardener has been made a scapegoat, and one of the excuses, at least, for the Act. The authors of the Bill, when it was introduced, were careful to avoid giving offence by any allusion to corruption among the audience they were addressing, some of whom must have grinned. The gardener, the coachman, the cook, and the butler are the wicked ones. The idea conveyed to outsiders was that the promoter or promoters of the Bill had quarrelled with their domestics about perquisites, and rushed to Parliament in a vindictive temper against the whole fraternity. What would be far better than any Act of Parliament would be for employers to allow their gardeners to receive the few shillings or pounds discount after bills and prices had been scrutinised and goods got at a reasonable price. At one nobleman's place that I can speak for this was done, and, in order that the heads of departments might have their proper share of the discount, the gardener, coachman, cook, housekeeper, and butler were all allowed to pay their own bills, and then return the vouchers to the estate office. It is not discount that hurts estate owners so much as gross neglect and mismanagement in high quarters. As regards the Corrupt Practices Bill itself, as far as its practical application is concerned, it is not worth twopence halfpenny of bad money, because it may be easily defeated without risk or danger. That anyone with the least glimmer of common sense can see. The Act is being simply treated with derision in business circles at the present moment. Let your "influential body of nurserymen" come out with their manifesto by all means, and publish the same in their catalogues, and we shall see who gets the discount. It won't be the buyer. That game was tried years ago by a well-known London firm now defunct, and gentlemen were flooded with circulars on the subject. The failure was complete, and much fun was made of the reformer in the gardening Press at the time. There is, moreover, another aspect of the subject. Gardeners' working hours are, nominally, about the same as those of others, but the hours gardeners actually work, or are obliged to be on duty, including Sunday and night work, average 11 hours per day or more, for which they seldom receive or expect any acknowledgment. A few shillings or pounds discount under such conditions need not cause any great qualms of conscience. *Scotch Thistle.*

———From the articles recently appearing in your paper it appears to me that there is no need for so much alarm about the subject. This new Bill was never intended for the seed or nursery trade, but to put a check upon municipal and other large bodies. My experience of many years has been that the majority of gardeners in England are engaged at low salaries (and, in many cases, too low), with the understanding of the employer that, after the house is supplied, the surplus can be disposed of for the gardener's benefit, also that they are allowed to take 5 per cent. from nurserymen or seedsmen, and, in some cases that have come under my notice, the employer gives instructions for his gardener not to deal with firms who do not give this amount for themselves. I fail to see where "corruption" comes in in making a present to a man any more than giving a waiter a tip. There can be no bribery in that, as in both instances value has been received. I do not think there is a firm of any good repute that would offer bribery as an inducement to get orders, but a legitimate old-standing arrangement of 5 per cent. (not more) no employer could possibly object to, as it is simply an encouragement for the gardener to look properly after the seeds, plants, bulbs, or whatever may have been supplied. There should be a straight line drawn, and the sooner the better; and I think the London trade should all meet as soon as possible and settle the matter before the 1st of January, so that all connected with the horticultural trade should know how to proceed for 1907. "*Viator*" (*Nurseryman*).

The Week's Work.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Climbers on trees.—In addition to those plants enumerated in these notes last week as being suitable for covering the stems of trees, there are many others, foremost amongst which are the Clematis, especially the early summer flowering *C. montana*, and *C. flammula*, which flowers late in autumn. For a giant Pine the Virginia creepers, particularly *Vitis quinquefolia muralis* (*Ampelopsis Engelmani*), would make a capital plant. One can readily imagine its fine colour in the autumn making a brilliant picture conspicuous to the eye from far and near. *V. monstans* (*A. Veitchi*) on the trunks of the least ornamental trees of the pleasure grounds proves effective, and its use in this manner is desirable. *Schizophragma hydrangeoides* (*Hydrangea scandens*), a Japanese plant, is a distinct climber, with picturesque habit, and is excellent for covering the clean boles of an Ash tree. In seashore gardens, as, for instance, in Cornwall, it grows with vigour, and attains to a great height, but it is doubtful if the species is sufficiently hardy in localities other than those in the south and south-west. *Polygonum Baldschuanicum* is a beautiful hardy climber, eminently adapted for smothering a dwarf tree or shrub. It grows to the height of 20 or 30 feet in a very short time, and its graceful pendent fascicles of white—slightly rose-coloured—flowers, which appear twice a year, are distinctly pretty. *P. multiflorum* is even a quicker and more vigorous grower than *P. Baldschuanicum*, but more tardy in its flowering. It is a desirable addition, however, to tree Climbers, for ever, without flowers it is handsome, owing to its peculiarly tinted foliage in summer, and in winter because of the attractiveness of its numerous long, slender, reddish stems.

The Ivy.—In regard to ornamental trees care should be taken now and every winter to examine them all and remove that most rapacious of climbers, the common Ivy. If this has not been done annually, and the work is only to be commenced at the present time, then caution and much discretion must be exercised. If Ivy has once secured full possession of a tree, it is wise to leave it undisturbed, but means should be taken to safeguard sound trees from its attack.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Late Cauliflowers.—Cauliflower plants are not capable of standing so many degrees of frost as Broccoli. Any "heads" becoming fit for use should be cut immediately, and those not so far advanced can safely be lifted and transplanted into frames. The check to the growth suffered at this season of the year is not so severe as it would be during hot summer weather, so there need be no fear of failure. Young seedling plants wintering in frames need an abundance of fresh air, and this may be admitted on mild days. Keep the plants as hardy as possible.

Winter Cucumbers.—The next two months form the most critical period for this crop. The short, dull days are not favourable to the production of fruitful growth. Keep the young shoots thinly trained, and apply frequent top dressings to the roots to encourage them to extend. The water should be heated to the same temperature as that of the atmosphere before its use for syringing or for applying to the roots. It is advisable to keep a supply of young plants in various stages of growth, instead of trying to continue through the winter with an unhealthy or unfruitful batch; employ a succession of young and more vigorous plants. Bottom heat is an essential aid to cultivation in winter, and there should be plenty of material available at the present time at least for making hot beds. Lockie's Perfection is one of the best winter fruiters.

Tomatos.—The present is a good time to sow seeds for raising plants to fruit early next year, and if successfully grown they should afford ripe fruits early in May. Select a variety that "sets" its flowers easily, such as Winter Beauty, a variety which is at the same time a good serviceable one for any purpose. An excellent yellow fruit, somewhat plum-shaped, is Sutton's Sunbeam. Tomatoes are more eagerly sought for early in the year than at any other season. Tomato plants in bearing should have the side growths removed when they are still quite small. If the plants have set a good crop, a slight top dressing with soil having a little wood ashes and "Le Fruitier" manure mixed together, will sustain the growth and help the fruits to grow to a larger size.

Early Potatos.—"Sets" intended for early forcing should now be gently started into growth by placing them in boxes in any house having an atmospheric temperature of about 50°. By Christmas time the tubers should be nicely sprouted and the sprouts should be thinned to not more than two growths as soon as this can safely be done.

Expose the tubers to the full light in order to strengthen the young growth. The tubers used for this purpose should have been selected when the previous crop was being dug, and some "greened." If this was done there is a better chance of sound growth than when the tubers are bought straight from the vendor and immediately started into growth. Last season I tried many varieties in frames for experiment, and the best of them for early digging was Sutton's Ringleader, Sharpe's Victor, May Queen, and Sutton's Gladiator. The last-named variety is an improvement on May Queen, and, being handsome and of good quality, it will be sure to meet with much appreciation.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Figs in Pots.—Trees that require larger pots should be attended to at once, and any that only need top-dressing should also be given immediate attention, so that they can be placed in the forcing house by the latter part of the present month. The pots should be plunged in a bed composed of fresh leaves and long stable litter, which will furnish a steady and lasting bottom heat. The Fig requires considerable heat and a humid atmosphere to induce it to start into growth thus early. The best compost for potting or top-dressing is a rather strong loam, with a sprinkling of wood ashes, half-inch bones, and a little Kirk's Vine Manure, with plenty of old mortar added. The soil should be made very firm in potting, and reach to within 2 or 3 inches of the top of each pot, which space will allow of a further top-dressing later on. As Figs require a large quantity of water, both at their roots and overhead, during the first few weeks of active growth, perfect drainage must be provided in the receptacles. Little pruning of the branches will be necessary, but some of the stronger roots should be cut back a little. If the trees are infested with red spider or with brown scale, they must be thoroughly cleansed with sulphur and Gishurt Compound dissolved in warm water, and applied with a stiff brush. The temperature to commence with should not be lower than 50° Fah. at night time, with a rise to 60° or more by day, maintaining the bottom heat at 60°, and, as the trees burst into leaf, increasing the day temperature gradually above 60°.

Propagating Fig-trees.—If it is intended to increase the stock of any particular variety, the present is a suitable time to propagate the Fig by means of cuttings. These should be made of ripened growths, and be placed around the sides of 5-inch pots, or singly in 3-inch pots in sandy soil. Plunge the pots in a brisk bottom heat, when the cuttings will soon form roots and be ready for potting singly into 4 and 5-inch pots. Keep them in active growth and pinch the shoots occasionally to obtain well-shaped trees. A trio of good varieties for early fruiting are Osborne's Forcing, White Ischia, and Negro Largo. The last-named variety is a somewhat vigorous grower, and, if planted in the border, needs almost annual root-pruning to maintain the tree in a fruiting condition.

Bananas.—Suckers that have been planted in their permanent fruiting beds should be given liberal supplies of water at their roots, and if either mealy bug or scale is present, early remedies should be applied to eradicate the pests. The temperature of the house should be maintained at 65° at night time, with a rise of 5° during the day. If a little bottom heat can be given them it will be an advantage. Musa Cavendishii is one of the freest fruiting and best all-round varieties.

THE HARDY FRUIT GARDEN.

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

Raspberries.—The Raspberry requires a good well-drained soil, and a fairly open situation. The best varieties are Hornet, Norwich Wonder, Superlative, Carter's Prolific, Baumforth Seedling, and, as an autumn fruiter, Belle de Fontenay. Yellow fruiting varieties are not cultivated largely, for they are generally weak growers, and the flavour of the fruits is not of the best. The Raspberry is not a deep-rooting plant, therefore, if the ground has been trenched recently it will not be necessary to do it again before planting, but if the soil is hard and unfertile it should be trenched. A good dressing of lime, burnt rubbish and manure should be worked into the soil. The best system of training the canes is to horizontal wires stretched from iron standards. Wooden posts can be used, but iron lasts much longer. Wooden poles, if employed, should be creosoted or painted with "Stop Rot." The uprights should be a foot higher than the canes are trained, for this will allow a net to be thrown over them to protect the fruits when ripe. Three wires will be sufficient, and of these the top one should be 6 feet and the first at about 2 feet from the ground level. The canes should be planted about 9 inches to a foot apart. A mulching of dry straw litter or manure should be placed over the roots after planting as a slight protection from frost. It is not advisable to plant in wet weather. In established plantations of Raspberries the canes should now be tied in position their full length, and be pruned later on. It is advisable not to prune till the end of February. Do not tie the canes too closely together, but remove all weak ones if this has not been already done. Any suckers should also be removed. A goodly sprinkling of lime about their roots will be an advantage, and after this is applied cover it with a good mulching of manure.

Black Currants.—All "big buds" should be picked off and burnt, and the trees should receive a spraying with XL.-All winter wash, and at the same time a thorough dressing of lime. If bushes are very badly infested with the mite they should be grubbed up and burnt and a fresh plantation made elsewhere, with healthy bushes. Black Naples, Carter's Champion, and Boskoop Giant are all good varieties. The Black Currant does not require much pruning, merely the wood thinning out and the bush made shapely.

Red Currants may be pruned any time after the foliage has fallen. If the branches have been summer pruned, the main shoots will not require much shortening, but if the bush is as large as is desired, then hard pruning produces the best results. Use a spraying of petroleum emulsion to render the buds distasteful to birds.

The Fruit Room.—Arrange the fruits in their order of ripening. The fruit room should be aired constantly, especially during damp, wet weather. I have finished gathering Doyenné du Comice Pears to-day (Nov. 7), but Olivier des Serres, Glou Morceau, and a few stewing varieties are yet firm on the trees. Apples Bismack Beauty, Schoolmaster, and Dutch Mignonne are still ungathered. Quinces and Medlars will soon be ready for harvesting.

THE ORCHID HOUSES.

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

Cattleyas and Lælias.—The spring-flowering plants that have completed their new growths will now require less water at the root. Expose them to the sunlight so that the newly-formed pseudo-bulbs may become thoroughly matured. Plants of C. Lawrenceana that are in mid-growth should also be placed in the lightest position possible. Afford water to plants of this species very carefully, as the young growths are liable to decay if there is any excess, especially in dull or wet weather. C. gigas, C. Dowiana, and its variety aurea being at rest should be kept on the dry side; the same remarks apply also to C. labiata when it has passed the flowering stage. After the flowers are cut it is advisable to remove the remaining part of the spike and sheath down to the base of the leaf, and as close to the apex of the pseudo-bulb as possible, so that it will not be possible for them to set up decay in the new pseudo-bulbs, which, if so affected, would need immediate amputation. C. Bowringiana, when it has done blooming, may be repotted, and after that operation has been done the plant should be only sparingly watered.

In the cool house plants of Sophronites grandiflora will soon begin to unfold their glowing scarlet flowers. The plants will require copious waterings at the root, and if one part of the house is warmer than the other it is there that the plants should be arranged, keeping them elevated well up to the light. S. g. Rossiteriana, S. rosea, and C. cernua require similar treatment, but the pretty S. violacea succeeds better in the cooler part of the Cattleya house. The hybrids which have been obtained from S. grandiflora are charming plants when in bloom. The following are among the best of these hybrids:—Sophro-Cattleya Chamberlainiana, S.-C. Queen Empress, S.-C. eximia, S.-C. Calypso, S.-C. George Hardy, S.-C. Batemanniana, S.-C. Leemani, S.-C. Saxa, also Sophro-Lælie Heatonensis, S.-L. Gratrixiæ, S.-L. Orpetiana, S.-L. Marriottiana, S.-L. Psyche, S.-L. Veitchii, and its variety Eros, &c. These plants grow very well in summer when suspended from the roof of the intermediate house, but the slightly warmer atmosphere of the Cattleya house is preferable for them during the winter months. At all seasons these hybrids are at various stages of growth, and where a collection of them is formed, some will be in bloom during the greater part of the year. Those plants which are growing and sending up flowers will need plenty of water at the root; prevent water lodging in the centre of the young growths, as they and the flower-buds are apt to decay from this cause; others which have completed their growth and have done flowering will need very little water at the root, affording just sufficient to keep them in a fresh and plump condition.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Clevelea, Allerton, Liverpool.

New Holland Plants.—Afford as much space as is possible to these plants on the stages, in order to admit a free circulation of air about them, without which hard-wooded plants will not remain in a healthy condition. At this season of the year, when the external air is heavily charged with moisture, a little heat should be circulated in the pipes to maintain a somewhat dry atmosphere. The plants should be carefully guarded against mildew, the presence of which may, if neglected, prove fatal to the plants. A preventive, and also a check, to the spread of the disease may be found in dusting lightly the under sides of the leaves with sulphur, and this should be done at intervals through the dull, damp days of winter. Great care should be taken in applying water to Epacris, Epacris, and New Holland plants generally, as these firmly-potted subjects do not absorb much moisture at this season of the year. Rainwater should be used exclusively, and it should be given in sufficient quantity to thoroughly moisten the whole "ball" of earth. Watering should be done early in the day, as this will allow the atmosphere to become somewhat drier before night-time. No plants recently repotted should be placed where cold draughts from the ventilators can reach them, but they should be allotted a position in the warmer part of the house. A temperature of 48-50° Fah. during the day-time will suffice for most of the Cape and New Holland plants, with a minimum of 45° at night, but Pimelias and Statices should have a warmth 10° higher than these temperatures.

Hardy plants for forcing, which have been suitably prepared in the reserve ground, should now be potted. Lift the plants carefully with a good "ball," retaining all the fibrous roots, for the destruction of these causes the plants to drop their buds prematurely, and often causes the plants to die. A careful selection should be made, choosing plants which have their buds well set. When potting, see that the soil is worked down to the bottom of the pots and made firm. Azaleas need a compost of two parts peat and one of loam, with a free addition of sand, while loam and leaf mould will suit most other hardy plants. After potting, afford the plants a good watering and plunge the pots in ashes in a spot where a little frost will reach them, for after being subjected to this, they will respond more readily when brought into the forcing house. Forcing should be done gradually, and especially does this apply to Azalea mollis and its varieties.

General Remarks.—Any decaying leaves on plants in pits and frames must be removed. Take every opportunity of affording ventilation, especially to frames containing Violets, otherwise many of the flowers will be injured by damp. Early batches of Fuchsias, Primulas, and Cyclamen, will benefit from a little heat in the pipes necessary to maintain a night temperature of 50°. The plants will improve by an application, twice a week, of some approved fertiliser. Do not allow the chemical to get into the crown of the Cyclamen, or injury may result to the flowers that are now pushing.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Nov. 17	German Gard. Soc. meet.
MONDAY,	Nov. 19	Nat. Chrys. Soc. Com. meet.
TUESDAY,	Nov. 20	Roy. Hort. Soc. Coms. meet. Hort. Club meet. British Gard. Assoc. Exec. Council meet. Leeds Paxton Soc. Chrys. Show. (2 days).
WEDNESDAY,	Nov. 21	Darlington Fl. Sh.
THURSDAY,	Nov. 22	Manchester & North of England Orchid Soc. meet.
FRIDAY,	Nov. 23	Aberdeen Chrys. Sh. (2 days).
SATURDAY,	Nov. 24	Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—41·7°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, November* 14 (6 P.M.): Max. 49°; Min. 45°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, November* 15 (10 A.M.): Bar., 30°, Temp., 50°; Weather—Dull.

PROVINCES.—*Wednesday, November* 14 (6 P.M.): Max. 50° Liverpool; Min. 42° England N.E.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Roses, Plants, Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY TO FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Sale of Nursery Stock at Bullhousen Farm Nurseries, Bisley, by Protheroe & Morris, at 12.

WEDNESDAY—
Palms, Azaleas, Roses, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.
Fourth Annual Sale of Fruit Trees at Platt Nurseries, Borough Green, Wrexham, by Protheroe & Morris at 11.30.

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

The Land Tenure Bill.

In connection with the movement for extending to nurserymen, seedsmen, and florists the benefits conferred by the Agricultural Holdings Acts on market-gardeners and farmers, and which it is proposed to extend still further by the Land Tenure Bill, as explained in our previous issues, an influential deputation, representing the Horticultural Trades' Association of Great Britain and Ireland, waited upon Lord Carrington, as President of the Board of Agriculture and Fisheries, on Monday last. The deputation, which was introduced by Mr. Marnham, M.P., consisted of the following well-known gentlemen: Mr. T. A. H. Rivers (President), Harry J. Veitch, George Bunyard, A. G. Jackman, Stuart H. Low, H. Morgan Veitch (hon. solicitor to the deputation), and Charles E. Pearson (hon. secretary of the association).

Mr. RIVERS (the president of the association) explained that it was seriously open to doubt whether, owing to the peculiar wording of the Agricultural Holdings Acts, nurserymen, seedsmen, and florists at present enjoy the benefits conferred by those Acts on agricultural tenants, which benefits it was proposed to still further extend by the Land Tenure Bill. He hoped, therefore, that his lordship would see his way to advise Parliament to adopt some such clause as that suggested by Mr. Morgan Veitch as being necessary for the purpose of defining accurately the position of nurserymen and seedsmen.

Mr. PEARSON (the hon. secretary of the association) pointed out that, although it seemed probable that nurserymen could not technically be described as market-gardeners for the purposes of the Acts in question, the matter could not be said to be wholly free from doubt in the absence of a judicial decision on the subject, and he suggested that no time should be lost in putting the matter right if a great amount of litigation were to be avoided. The oversight had probably arisen owing to the fact that their trade had practically been unorganised until about seven years ago, and from the very nature of their business nurserymen were a scattered class. He gave a concrete instance within his own experience of the hardship under which nurserymen at present laboured as compared with market-gardeners. Some time ago he had removed from a piece of extra ground he had rented for the purposes of a nursery, and, although he had carried out many improvements, which had, in fact, almost doubled the value of his late holding, he was not only unable to obtain compensation from his landlord, but had actually to meet a contra account for dilapidation of old buildings on the holding. The speaker concluded by pointing out the special advantages which nurserymen would get under the Acts as regards improvement of land by manuring, as well as the machinery for arbitration.

Mr. MORGAN VEITCH, as hon. solicitor to the deputation, pointed out that the Agricultural Holdings Acts applied to market-gardeners jointly with farmers, as both classes were specifically mentioned in the Acts, but, presumably through an oversight on the part of Parliament, no provision had been made for including nurserymen, seedsmen, and florists within the purview of these Acts. The oversight was especially noticeable, because, when it came to imposing liabilities, as in the case of the Workmen's Compensation Act, Parliament had been careful to declare that "agriculture" should be deemed to include "horticulture." Both nurserymen and gardeners were treated as one under common law, and also for rating purposes, and the two trades might accurately be described as sister trades. Having regard to these facts, Mr. Veitch invited his lordship to compare the difference in the position of a market-gardener who, as a yearly tenant, was quitting his holding, and the position of his next-door neighbour, the nurseryman, under similar circumstances. In such a case the market-gardener would get full compensation for various improvements effected by him, even without his landlord's consent, as well as compensation for various crops left behind for the landlord's benefit. The nurseryman, on the other hand, would get compensation neither for his buildings nor for his plants and shrubs left behind. All the privilege which the nurseryman enjoyed at the present time was the bare right under common law to remove his glasshouses and his stock-in-trade, but it might so happen that the time when his landlord turned him out might be quite unfavourable for transplanting. Mr. Veitch further pointed out that in the case of yearly tenancies a market-gardener was entitled to a year's notice, whereas a nurseryman was on the same footing as an ordinary householder, and would be entitled to have only six months' notice expiring at the end of the current year's tenancy. [Lord Carrington here consulted his legal adviser, who agreed that such was the case, although the position might be varied by special agreement on the point.] Finally, the speaker urged that it would be illogical to deny the desired benefits to the nursery trade on the ground that in some cases market-gardeners and farmers had been known to abuse the privileges given to them by the Acts, and the fact that the Land Tenure Bill contained no machinery for checking any such isolated cases of abuse entitled one to assume that, generally speaking, no undue advantage had been taken of the Act at the expense of the landlord. Furthermore, it would be illogical to say to nurserymen, "We cannot give you the benefit of these Acts, because occasionally the agricultural tenant has been known to abuse his privileges," while in the same breath one would have to admit that the Land Tenure Bill was conferring even further privileges on the agricultural tenant.

Lord CARRINGTON, in reply, said that it had given him great pleasure to receive so influential a deputation, and he thought that the object with which the deputation had approached him showed that the benefits conferred by the Agricultural Holdings Acts were appreciated by tenants, and were working satisfactorily. He had taken the opportunity of obtaining the opinion of the law officers of the Crown on the novel point now raised, and they quite agreed that probably a nurseryman could not obtain the benefits of the Agricultural Holdings Acts as the law now stood. He entirely sympathised with the position of the nursery and seed trade under these circumstances, and, although he could not venture to alter the Land Tenure Bill as now before Parliament by the insertion of a clause in the desired form, he would strongly advise the Horticultural Trades' Association to lose no time in having a special Bill brought in for the purpose of remedying their grievances, and he would be happy to see representatives of the association at any future time in connection with this subject.

Mr. MARNHAM, M.P., pointed out to his lordship that there was no need for him to directly make any addition to the Land Tenure Bill in order to comply with the request of the deputation. As a matter of fact, a Conservative member, Mr. Gardner, had already put down an amendment of some kind on the subject, and the deputation hoped that his lordship would see his way to accept this amendment when it came to be raised.

Lord CARRINGTON stated that he was sorry to say he would have to oppose the amendment, and still considered that a special Bill would best meet the case.

We understand that it is hoped to raise this question again when the Land Tenure Bill comes to be considered in the House of Lords. Those desirous of assisting the movement, and who wish for further information on the subject, should lose no time in communicating with the hon. secretary, Mr. Charles Pearson, Lowdham, Notts, or with Mr. Morgan Veitch, Norfolk House, Norfolk Street, Strand, London.

OUR SUPPLEMENTARY ILLUSTRATION.—The variety of Œnothera (Godetia) forming the subject of our supplementary illustration this week was shown by Messrs. DOBBIE & Co., Rothesay, at the Royal Horticultural Society's meeting, held on July 21 last. The plants then exhibited, and there were many, were perfect specimens of good habit, as may be seen in the small sketch at the corner of the illustration. The flowers were of large size, and double, the colour being of a rich shade of rosy-pink. The same variety, when exhibited by Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr. Mr. W. BAIN), on August 29, 1905, was granted an Award of Merit. The value of Godetias in summer flower-gardening is so generally known, we need not say much upon that subject now, but it may be noted that wherever Godetias are employed the plant known as "Schamini" should be given a place.

ROYAL HORTICULTURAL SOCIETY.—Meeting of the Committees: The next fruit and flower show will be held on Tuesday, November 20, in the Society's Hall, Vincent Square, Westminster. A lecture on some recent researches at Wisley, illustrated by lantern slides, will be given by Mr. G. MASSEE, V.M.H., at 3 o'clock.

HORTICULTURAL CLUB.—The next House Dinner of the club will take place on Tuesday, November 20, 1906, at 6 p.m., at the Hotel Windsor, when Mr. T. W. SANDERS will talk about "The Country Life of Sweden, Holland, Denmark and Belgium."

FLOWERS IN SEASON.—APONOGETON ANGUSTIFOLIUM.—Under the name A. capense (which we do not find in any book) Mr. AMOS PERRY has sent us flowers of this pretty little species. It differs from the common A. distachyon in the much smaller size of its leaves and flowers. It was described originally in Aiton's *Hortus Kewensis*, t. 495, and is figured in the *Bot. Mag.*, t. 1268. It is described under the above name by Mr. ARTHUR BENNETT in vol. vii. of the *Flora Capensis*, p. 43. For the identification of the plant we are indebted to Mr. N. E. BROWN.

CELERIAC.—We have often wondered, when seeing the large quantities imported from Germany of this root, which pass our windows on their way to the adjoining market, why it is not more often grown here. That it can be produced at home is evidenced by a fine sample sent us by Mr. HONESS, gardener to C. COMBE, Esq., Cobham Park, Surrey. One of the roots weighed 2 lbs. 7 ounces, and the lightest 1 lb. 12 ounces. The quality was proportionate to the size. Mr. HONESS would do good service if he would kindly detail his method of cultivation.

THE BOTANICAL MAGAZINE.—In the November number we find descriptions and coloured illustrations of the following plants:—

LILIUM MYRIOPHYLLUM (*Franchet*), tab. 8,102.—A Chinese species discovered by PÈRE DELAVAY, and introduced by Mr. E. H. WILSON. See *Gardeners' Chronicle*, 1905, ii., with figure. The present description is furnished by Mr. C. H. WRIGHT.

LYCASTE DYERIANA (*Sander ex Rolfe*), t. 8,103.—A topsy-turvy species growing head downwards like Cattleya citrina. Flowers greenish-yellow. See *Gardeners' Chronicle*, 1895, ii., 49. Described by Mr. ROLFE.

COTYLEDON DEVENSIS (*Hort.*), tab. 8,104.—A supposed hybrid between C. glauca and C. gibbiflora, alias Echeveria metallica, received at Kew from Messrs. DICKSON, of Chester. The relatively gigantic size renders its parentage uncertain. It is a handsome plant well worth cultivating. The name devensis is derived from Deva, the Roman name for the town we now call Chester. Mr. N. E. BROWN contributes the note on this species.

RIBES CRUENTUM (*Greene*), tab. 8,105.—A Californian species with reddish flowers, and globose very bristly berries each the size of a small Cherry. The description of the Kew plant is from the pen of Mr. S. A. SKAN.

PLEIONE YUNNANENSIS (*Rolfe*), tab. 8,106.—This is the very pretty rose-coloured Pleione exhibited by Messrs. SUTTON in February last. See *Gardeners' Chronicle*, 1906, vol. i., p. 115. Mr. ROLFE is responsible for the determination of the species.

SMALL HOLDINGS.—The Departmental Committee of Small Holdings, of which Lord ONSLOW is Chairman, expect that their draft report will be presented to the President of the Board of Agriculture and Fisheries at an early date. The committee was appointed in April, 1905, to enquire into the various arrangements made by landowners in recent years for the provision of small agricultural holdings, and to report as to the conditions under which such holdings are most likely to be attended with success and as to the measures which may most advantageously be taken, either by legislation, co-operative association, or otherwise, to secure the increase of their number. Earl CARRINGTON was a member of the committee until his appointment as President of the Board of Agriculture and Fisheries.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. A. J. BROWN informs us that the eighth local annual concert, in aid of the above charity, will be held at the Constitutional Hall, Chertsey, on Thursday, November 22. The following ladies and gentlemen, with others, have already accorded their patronage:—Sir EDWARD and Lady STERN, J. A. MULLENS, Esq., Sir PHILIP WATERLOW, Bart., and F. J. MARNHAM, Esq., M.P. The prices for admittance will be as follows. Reserved seats, 3s. (four for 10s. 6d.), 2s. and 1s. Plan of hall at RAWLINGS & WALSH, Limited. We trust that the event will be as successful as previous ones have been. Any information can be had from Mr. A. J. BROWN, 73, Eastworth Road, Chertsey.

FRUIT CONFERENCE AT WYE COLLEGE.—Under the chairmanship of Mr. LAWRENCE HARDY, M.P., a large and representative conference of fruit-growers from the fruit-growing counties of England, was held at the South Eastern Agricultural College on November 7. Papers were contributed on the "Planting of fruit trees," "Strawberries," "American Blight," and "Fungus Diseases." In the latter paper, reference was made to the American Gooseberry-mildew, the appearance of which in England has been noted (see p. 317) by the College mycologist (Mr. SALMON), and a resolution, calling upon the Board of Agriculture to take immediate steps to prevent further importation of Gooseberry bushes and to destroy infected stocks in this country, was unanimously passed.

HORTICULTURAL EXHIBITION AT MANNHEIM.—We are informed by the Board of Agriculture and Fisheries that, as we have already announced, a Horticultural Exhibition will be held at Mannheim, in the Grand Duchy of Baden, from May to October, 1907. Exhibits of fruits, vegetables, Orchids and Cacti will be admitted from this country. Applications for information should be addressed to the Office of the Exhibition, Friedrichsplatz 14, Mannheim, Germany. A copy of the provisional programme can be seen at the Offices of the Board of Agriculture and Fisheries, 4, Whitehall Place, S.W.

VINCA MAJOR.—In this country, at least, it is not common to see the fruit either of Vinca major or of V. minor. Messrs. BARR & SONS send us a pod of Vinca major with ripe seed produced in a garden at Sydenham. Once before we had a specimen from Mr. CADGE, of Norwich, and once a pot-plant of V. minor on our own balcony produced a pod, which was knocked off by a respectless housemaid. The pod is what botanists call a double follicle.

ROYAL METEOROLOGICAL SOCIETY. An ordinary meeting will be held at the Institution of Civil Engineers, Great George Street, Westminster, S.W., on Wednesday, November 21, 1906, at 7.30 p.m., when a paper will be read on "The Abnormal Weather of the past Summer, and some of its Effects," by WILLIAM MARRIOTT, F.R.Met.Soc.

THE LATE C. B. CLARKE.—The *Journal of Botany* for November contains an interesting notice of the career of the late botanist with an excellent portrait. His many and wide travels in India are detailed, and his amazing versatility, on which we have already commented, are well brought out. Mr. BLISS, the Vicar of Kew, a personal friend, in commenting upon the "variety of the fields of knowledge in each of which CLARKE seemed equally at home" says truly: "Whether the subject were Tea-planting in Assam, Christian missions in Bengal, University studies at Cambridge nearly half a century ago, or a score of others, he seemed not only to know about it, but to know and have at his fingers' ends all about it. . . . . In one of the earlier years of our friendship I was anxious to find someone to tell a gathering of parishioners something about Christian missions in India . . . . . When I broached the subject to him I could not help feeling tickled at his at once replying 'Well, if there is one thing I think I know more about than another it is Christian missions in India.' The only difficulty he felt was to keep his interesting and instructive information within moderate limits."

BERLIN BOTANIC GARDEN.—Professor Dr. A. ENGLER announces that the Royal Botanic Garden, the Botanical Museum, and the Central Office for the Colonies are now transferred from Berlin, together with all the offices and departments connected with them, to Dahlem, near Berlin. It is requested that all communications intended for the above-named establishments be in future addressed, 6-8, Königin Luise Strasse, Dahlem, near Berlin.

DISCOUNTS.—It is not always easy to distinguish between what is "corrupt" in a legal sense and what is legitimate. Circumstances alter cases, and what may be deemed legitimate in one case is not expedient in another. We have alluded on more than one occasion to the fact that the law which will control our home traders will not affect their foreign competitors. Here are two examples from Holland:—"Messrs. ——— beg to inform [sic] that a discount is allowed of 15 per cent. on all orders sent by you or your employer. Our prices are moderate, our quality is unsurpassed, and all orders are immediately forwarded."—"To gardeners. We allow a discount of 10 per cent., which amount will be sent to them by post-office order as soon as the amount of invoices has been remitted to us." If the employer who pays the bill is aware of this practice, and does not object, there is of course no "corruption," but he would do better to pay a fair price for his goods and give his gardener remuneration adequate to the responsibility cast upon him, and the skill and knowledge required of him. At present this is by no means universal.

ARTIFICIAL FERTILISERS: THEIR NATURE AND FUNCTIONS.—Mr. A. D. HALL is announced to deliver a course of five lectures on this subject at the Society of Arts, John Street, Adelphi, London. The lectures will be divided as follow: November 19, "The nutrition of the plants"; November 26, "The fixation of nitrogen"; December 3, "Nitrogenous fertilisers"; December 10, "Phosphatic fertilisers"; and December 17, "Possic fertilisers" and "Consumption of fertilisers." Each lecture will commence at 8 p.m.

THE PROFESSORSHIP OF BOTANY AT CAMBRIDGE.—Mr. A. C. SEWARD, well known for his researches into the structure and affinities of fossil plants, has been appointed as Professor in the room of the late Professor MARSHALL WARD.

"INDEX FILICUM."—We are pleased to be able to record the completion of Mr. CARL CHRISTENSEN'S *Index Filicum*. This is a complete list of all the names of Ferns published between the years 1753 and 1905. It will be remembered that the late THOMAS MOORE among his many services to horticulture included an *Index Filicum*. This was, unfortunately, never completed, and although we have had many works on Ferns, we still lacked a complete list of names and synonyms. This has now been given us in a very complete form by Mr. CHRISTENSEN, who acknowledges the assistance he has had from Dr. CHRIST, of Basle; Mr. GEPP, of our own Natural History Museum; and Dr. HIERONYMUS, of Leipsic. To the names of each species is appended a reference to the founder of the species and to the work in which it is described, with the date of publication. Reference is also made to the standard authorities such as HOOKER and BAKER, Dr CHRIST, and ENGLER and PRANTL. The Ferns are divided into twelve families, distributed in 149 genera and 5,940 species. Of these latter 953 are recorded as of doubtful nature or as indicated in gardens without sufficient identification. The total number of names dealt with is 22,680. An important feature of the work is a complete alphabetical and systematic enumeration of all the books and periodicals in which species of Ferns have been described and published, with the names of the authors and the dates of their publications. The work is one entirely for systematic botanists, as we find few references to the biology or phylogeny of Ferns. The names of SUMINSKI and HOFMEISTER are not even mentioned. BOWER is named only as answerable for one species of Ophioglossum without reference to his researches on apogamy and apospory. The names of FARMER and DIXLEY are not included. We mention these facts with no intention of disparaging the present book, as such details did not enter into the author's programme, but solely in the hope that some competent botanist will take up the thread where Mr. CHRISTENSEN has left it, and give us a complete summary of the life-history of Ferns so far as it is known. In the meanwhile Mr CHRISTENSEN'S work will be of as great value to students of Ferns as the monumental *Index Kewensis* is to investigators of flowering plants. It is, in fact, indispensable. It may be had through WILLIAMS & NORGATE, or other foreign booksellers.

THE CULTURE OF CORDON FRUIT TREES.—Gardeners have long since realised that it is possible to grow the very finest fruits on young trees, and on espalier trained trees rather than upon bush, pyramidal, or standard specimens. It is a well-known fact that a very large proportion of the hardy fruit displayed at the exhibitions are the produce of the former types. Those concerned with the sale of fruit have told market growers again and again that there is always a sale for the best produce, even when the market is glutted with fruits of common place quality. Hearing, therefore, that one of the well-known salesmen in Covent Garden Market was about to sell by auction a collection of 5,000 young fruit trees at his residence at Hook, near Surbiton, we called there on Monday last with a view to ascertaining how far the successful salesman had succeeded as a cultivator. These trees, it appears, were planted five years ago for the purpose of producing fruits of the highest quality. In nine cases out of ten the trees are cordons, and trained obliquely to wires strained across the ground to posts erected at either end. The soil is of rich loam overlying clay, and may be regarded as a first-class medium for the roots of hardy fruit trees. It was evident that Mr. LIDDIARD had given much personal care to the growing of the trees, and he has succeeded in obtaining excellent fruits of Apple and Pear. Whether it would have proved a profitable undertaking or not we do not know, but now that the land is to be prepared for building upon, gardeners have a good opportunity for purchasing cordons of the best varieties of Apples and Pears, of a size it is sometimes difficult to obtain in large quantities at the nurseries. Being seven, eight, or more feet in height, a wall or fence could be covered with them at once, a convenience which is sometimes much desired. The goblet-shaped trees have been trained by taking three or four shoots out horizontally for the first two years or so, and then turning the ends up to grow vertically, afterwards cutting out the centre.

AGAVE AMERICANA.—This, the longest known and most widely cultivated species, is, according to Dr. TRELEASE, not known in a wild state. Along the shores of the Mediterranean it has been naturalised and grows like a weed.

BLACK CARROTS.—The *Tribune Horticole*, in a recent number, speaks of some Black Carrots exhibited in Paris. They were derived from seed obtained in Morocco. Whether Black Carrots are likely to prove any improvement on better-known kinds is open to doubt. So far as mere colour is concerned, we should think the black colour offers no temptation.

CONSERVANCY OR DRY SANITATION VERSUS WATER CARRIAGE.—This is the title of a pamphlet, published by E. & F. N. SPON, for Mr. J. DONKIN. When the enormous waste of fertilising material, and the concurrent danger that exists in the pollution of air and water, are taken into consideration it becomes increasingly evident that the whole question of the proper disposal of sewage matter still needs the fullest investigation. Mr. DONKIN is a strong advocate of the dry earth system coupled with arrangements for keeping the dry and the liquid elements of sewage apart. The circumstances are so different in town and country that no one system is suitable for isolated houses, for aggregates of dwellings as in villages, and still more in towns. Mr. DONKIN'S remarks are worthy of attentive consideration.

RUBBER.—So great is the interest now taken in all that pertains to the natural history and utilisation of rubber that we welcome the reproduction in a collected form from the Kew Bulletin of various previously scattered papers. The articles are of a very varied character, dealing as they do with numerous species belonging to widely different natural orders, growing in very diverse situations. Those concerned either scientifically or commercially with Rubber plants will find this summary of great service to them. The utility of reproducing mere formal official correspondence between one Government department and another is not obvious. If it is necessary to preserve them at all, such letters should be kept in the official "pigeon-holes" till required.

CHRYSANTHEMUM NOTES.

CERTIFICATED CHRYSANTHEMUMS AT THE PARIS SHOW.

THE Floral Committee had a busy time at the recent Paris show judging the numerous novelties. This was done the day before the opening of the show, with the result that 102 Certificates of Merit were awarded. These were divided among 13 exhibitors, and of these M. Aug. Nonin received 17; the Marquis de Pins, 14; M. Alfred Chantrier, 12; M. Ernest Calvat, 11; M. Ducault, 10; M. Delbois, 8; M. Montigny, M. Durand, and Messrs. Vilmorin, Andrieux & Co., 5 each. The Prix d'Honneur—a work of art—was awarded to the Marquis de Pins for his new seedlings, and Gold Medals to M. Chantrier and M. Calvat. Large silver-gilt, silver and bronze medals went to the other exhibitors. *C. H. P.*

CHRYSANTHEMUMS AT THE CRYSTAL PALACE.

THE entries in the classes for large Japanese blooms at the N.C.S. exhibition at the Crystal Palace, of which a full report was published in the last issue of the *Gardeners' Chronicle*, were fewer than ever, and there is no doubt but that there is less enthusiasm displayed over these classes than was formerly the case. Exhibitors are fewer, and those who do not exhibit large blooms do not cultivate them so freely as they did. The reason is that such huge blossoms are almost useless for decoration. Again, the method of displaying them in boxes at shows is not a good one. The Chairman of the Committee stated at the luncheon on the show day that he would be glad to see all the boards swept out of the show. This was a strong condemnation of the present system of displaying the blooms. Even the "vase" classes for large flowers seemed to lack in interest for the admirers of this flower. Much more interesting were the well-filled classes for single-flowered varieties and for decorative kinds shown in vases, epergnes, and so forth.

Take, for instance, the class for "singles" in not fewer than six varieties, set up for effect with any natural foliage and grasses. Here there were five entries, making an imposing display. In this class we saw the Chrysanthemum in its true decorative aspect. I am not sure the prizes were correctly awarded in this class, and, bearing in mind the wording of the schedule, I am inclined to say that the 3rd prize exhibit filled better the true aim of the class. This was made up of a quantity of flowers arranged in a truly decorative manner. The 1st prize exhibit was made up with specimen blooms in limited numbers.

The vases and epergnes of small-flowered varieties so pleasingly associated with suitable autumn foliage, Ferns, &c., were indeed of a high order of merit, and attracted many admirers.

No one who saw the Reflexed flowers could admire the puny specimens flopped down as they were on green boards, quite pygmies as compared with what this type was a few years ago. It would be better to eliminate such a class from the schedule. The Anemone-flowered varieties were distinctly creditable from a grower's point of view, but they, too, should have been arranged in a more attractive manner.

It used to be said that the Incurved flowers must be staged in cups upon boards to give them effect. The exhibits in the class provided for this section in vases, six blooms of each, was a contradiction to such an idea, as this was really an interesting class, and the blooms were of much decorative value.

In the classes for Japanese flowers there was an absence of any blooms of a startling character. Possibly the two best stands of blooms in the show were the first and second in Class 14—twelve Japanese distinct. If the judges had reversed the positions of the first and second prizes, few persons would have found fault with the decision.

The exhibit made by Mr. P. Ladds with market varieties in bunches was distinctly interesting and instructive. *E. Molyneux.*

TRADE NOTICE.

Mr. F. KNIGHT EAMES, late Fulwell Nursery, Strawberry Hill, Twickenham, informs us that he has disposed of the nursery business to Mr. G. Neville Smale.

NEW INVENTIONS.

RANDALL'S PLANT HOLDER.

Mr. Randall, Double Street, Blackburn, has lately invented a "Tilting Plant Holder." This may be briefly described as an iron ring to hold a flower-pot, springing from a curved arm on a firm support. The holder is adjustable to any desired height or curve, and is intended to aid in the satisfactory arrangement of pot-plants at exhibitions or in conservatories by enabling them to be fixed in almost any required position.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 6.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Messrs. A. W. Sutton, G. Nicholson, J. W. Odell, E. M. Holmes, W. C. Worsdell, E. A. Bowles, A. Worsley, G. S. Saunders, C. T. Druery, J. T. Bennett-Poe, H. J. Elwes, and F. J. Chittenden (hon. secretary).

Mites on Ferns.—Referring to the fronds of Pteris serrulata sent to the last meeting, Mr. SAUNDERS reported that they were evidently attacked by the mite Tarsonymus tepidariorum, but he was only able to find a few cast skins. The mites had evidently been killed by the fumigation or by the dipping the plants had undergone.

Reputed wild Dahlia.—Dr RENDLE reported that the plant shown at the last meeting, raised from seed alleged to be that of the wild Dahlia, was Bidens tripartita!

Galls on roots of vine, &c.—Mr. G. S. SAUNDERS showed galls on the roots of vine caused by Phylloxera. He also showed fruits of Crataegus pyracantha, apparently affected by a fungus, which will be further examined, and a drawing of a double Banana fruit. The fruit had appeared single, but when the skin was removed was seen to be double.

Malformed flowers of Plantain.—Mr. E. M. HOLMES showed spikes of Plantago major very much branched, and having some of the flowers converted into small foliage leaves.

Wolffia arhiza.—Mr. G. NICHOLSON showed plants of Wolffia arhiza, a native of south-east England and other parts of Europe, the smallest of the flowering plants appearing like small grains of green sand.

Fruits of Periploca and Ficus repens.—Dr. MASTERS showed fruits of the shrub Periploca græca from Mr. CUTBUSH, of Highgate; and Mr. CHITTENDEN showed fruits of Ficus repens from Mr. HAMMOND, of Widford, Chelmsford, under whose care the plant fruits freely.

Muisel scale on Apple.—A letter concerning this pest was received from J. B. DOWSON, Esq., of Pershore, who said he had used the winter wash against it in vain in the previous year, the pest having increased enormously during the past season. It was recommended that the trunks of the trees and the thicker branches should be scrubbed with paraffin emulsion during the winter, and the trees sprayed with the same (of course, of much less strength) in June of next year.

Acorns of Quercus rubra.—Mr. C. PARROTT, of Springfield Park, Clapton, sent ripe acorns of Quercus rubra to show that this Oak perfects its fruit in this country. This Oak, like Q. coccinea and Q. rubra, perfects its fruit in the second year after flowering, and both perfect and partially developed fruits are to be found upon the same tree.

Botanical Certificate.—An inflorescence of the Orchid Bonatea Ugandæ, Rolfe, was shown by Mr. BROWN, of Haverfield Gardens, Kew. It is a newly-introduced species from Uganda in the way of B. speciosa. On the motion of Mr. C. T. DRUERY, seconded by Mr. BENNETT-POE, it was unanimously awarded a Botanical Certificate.

Plant diseases.—Specimens of diseased Violets from Exeter and Northwich, and Celery from Colyton, were received and will be reported upon at the next meeting.

LINNEAN SOCIETY OF LONDON.

NOVEMBER 1.—Professor W. A. Herdman, F.R.S. (president), in the chair.

The president exhibited spirit specimens of young plaice hatched and reared in captivity at Port Erin, Isle of Man, and pointed out the different rate of growth occasioned by different surroundings at the station.

Mr. George Talbot exhibited abnormal specimens of Equisetum maximum, Lam. (syn. E. Telmateia, Ehrh.), from Broxbourne, Herts, where they grew on dry ground and in a narrow area. They were characterised by the development of a fruiting zone on an otherwise typically sterile stem; one specimen showed a prolongation of the stem bearing branches beyond the cone; another showed an extremely reduced cone borne on the summit of a branch.

Professor F. E. Weiss, F.L.S., also sent three lantern-slides for exhibition, of specimens of the same species from one spot near Stockport which annually produces normal and abnormal cones from the same rootstock.

The General Secretary exhibited a collotype print, 42 centimetres by 33 centimetres, two-thirds the size of the original portrait of Carl von Linné, by P. Krafft, which had been presented by Herr. J. Cederquist of Stockholm. It had been prepared for the forthcoming 200th anniversary of the birth of Carl von Linné, and was considered an admirable specimen of collotype printing.

The first paper was one by Sir Dietrich Brandis, who spoke on the structure of Bamboo leaves. He explained that while the leaves of other grasses exhibit a great variety of structure, those of Bamboos are exceedingly uniform. In bud they are always convolute; they all have in the upper epidermis, alternating with the longitudinal nerves, bands of large "bulliform cells," known as motor-cells. In most species these motor-cells are filled, entirely or partially, with solid masses of silica. Between the bands of bulliform cells and the longitudinal nerves, Bamboos (with one exception as far as known, Chusquea pinifolia of South-east Brazil) have large apparent cavities, which are completely filled by large flat thin-walled cells, lying one over the other, like the leaves of a book. This tissue is entirely different from that which, in a young state, fills the cavities in the leaves of Glyceria aquatica, G. fluitans, and other aquatic grasses. The species placed by Dr. Stapf in "Flora Capensis" in the new tribe Phareæ have, as far as known, leaves with a structure similar to Bamboo.

The last paper was a brief one by Professor A. J. Ewart, on the systematic position of Hectorella cæspitosa, Hook f., which had previously been regarded as belonging to the Portulaceæ, but which the author suggested might be transferred to the Caryophyllaceæ.

FRENCH NATIONAL CHRYSANTHEMUM.

The eleventh annual show and congress of this Society was held this year in the old Norman town of Caen, and, for a provincial show, was one of the best we have seen in France. It was held in the Hotel de Ville, partly in the building and partly in the courtyard under canvas awnings. The fruit trees, shrubs, &c., were accommodated in the public square opposite.

Pot plants were largely staged, a grand exhibit coming from Messrs. VILMORIN, ANDRIEUX & Co., who had good specimen plants freely flowered. They were awarded the grand prix d'honneur. The following were some of the best varieties: Nivose, Col. W. B. Smith, Viviand Morel, W. R. Church, R. Hooper Pearson, Miss Alice Byron, F. S. Vallis, &c. There were also in the courtyard several other large collections of pot plants, M. HALOPE, Messrs. FOUCQUEREAU-LEUFANT & Co., M. GERVAIS, and others being represented.

A large exhibit came from M. L. CAVRON, Cherbourg, most of the popular varieties being included. He also staged several grafted plants and some curious imitations of Japanese pyramid trained plants in tubs.

Several good exhibits of seedlings were seen. M. CALVAT'S lot were the best, and of these we specially noted Mme. Mathieu, a big yellow Japanese, Mlle. Jeanne de la Cronée, not unlike Mrs. Coombes, Gouverneur Jonnart, a fine large yellow, Tums, pale blush, Roi d'Yvetot, yellow-shaded cream.

M. ALFRED CHANTRIER also showed novelties. La Sontiela is a fine amaranth-coloured Japanese, with a silvery reverse; Montague d'Aspenin, a lilac-purple, being the best of his Japanese varieties, while in Incurveds, Col. Labouchère was one of the finest blooms we have seen at any French show. It is a big, massive, deeply-built flower of perfect form, with broad florets very regular in curving, the colour being a pure golden yellow of the richest shade. Altogether this grower staged 22 varieties.

Cut blooms were well shown in classes varying from 12 to 100 blooms, many of the flowers being quite equal to those shown the previous week in Paris. M. F. COUILLARD, M. PAUL L'ABBE, M. HALOPE, M. CH. GERVAIS, and M. CHARVET, a well-known French amateur of Avranches, all had splendid collections.

A collection of 110 novelties of 1906 was shown by M. GERVAIS, but only in medium-sized blooms.

M. ROSETTE, of Caen, had a fine display of cut blooms hors concours. Messrs. LECLERC, ERNEST MASSIEN, also staged cut blooms in good style.

Around the sides of the salle des fêtes there was a continuous border of plants in pots, with a verdant bank of large Palms, &c.

A charming circular group of ornamental and foliage plants was staged by Messrs. LETELLIER, FILS ET CIE. The same firm also staged paeony-flowered Dahlias. Messrs. FOUCQUEREAU-LEUFANT & Co. likewise had a collection of cut blooms of Dahlias.

In the section for fruit trees and shrubs, staged on the square of the Place de la République, Messrs. LETELLIER, FILS ET CIE made a fine display. M. L. DAVY, Caen, showed ornamental shrubs, &c.

THE CONGRESS.

This was held on the afternoon of the first day, M. Viger presiding. Papers were read on the best means of popularising the Chrysanthemum. M. Pergallo and M. Vigaux were the authors.

It was decided that the society should issue a cheap cultural manual. The place for next year's show and congress was by vote decided to be Toulouse.

On the following morning a second sitting of the congress took place.

WEST OF ENGLAND CHRYSANTHEMUM.

NOVEMBER 6. This society held its annual exhibition at the Guildhall, Plymouth, on this date. Entries in the open classes showed some falling off from those of previous years, but the great hall was nevertheless filled with brightly-coloured flowers, and a large marquee contained vegetables. The day was fine and the attendance both in the afternoon and evening was satisfactory.

The class for a group of Orchids produced a splendid display, the 1st prize being won by Messrs. J. WEEKES & SONS.

Forty-eight Japanese blooms, distinct.—Mr. F. S. VALLIS took the 1st prize in this class, as he has done for several years past, with a fine stand, scarcely, perhaps equal to his exhibits of former years.

Twenty-four Japanese blooms, distinct.—Mr. F. S. VALLIS again easily won the 1st prize with a stand of heavy flowers, among which were two magnificent specimens of F. S. Vallis and an equally good example of Reginald Vallis.

The 1st prize for six blooms of a white Japanese Chrysanthemum, was won by Mr. B. H. HILL, and the 1st prize for six Japanese Incurveds by Mrs. GULSON, who was also successful in taking 1st prize in the class for 18 Japanese, shown in vases.

Mr. G. SOLTAU-SYMONS secured the 1st prize for a group of Chrysanthemums.

Fruit. The important class for 36 distinct varieties of Apples saw Mr. B. H. HILL to the fore, while for 20 varieties the Earl of MORLEY obtained the 1st prize. Other prize winners in the fruit classes were Mr. B. H. HILL, Mrs. GULSON, the Earl of MOUNT EDGECUMBE, the Earl of MORLEY, Rev. S. BARING-GOULD, Mr St. MAUR and Mr. F. R. RODD.

Vegetables.—The chief prizes were carried off by Mr. B. H. HILL. The Earl of MORLEY was awarded the 1st prize for a collection of salads, which was considered one of the best exhibits in the show.

Nurserymen's exhibits contributed much to the interest of the show. The DEVON ROSARY, Torquay, exhibited a collection of over 60 varieties of Apples, many Pears, and a collection of Cactus Dahlias. Messrs. R. VEITCH & SON, Exeter, staged a large assortment of flowering and berried plants. Messrs. ROSSITER & Co., Paignton, staged Apples and sprays of flowering shrubs. Messrs. TOMLINSON & SONS, Devonport, showed a collection of Apples and miscellaneous plants. Mr. E. C. ARNOLD, Plymouth, staged vegetables.

SOUTHAMPTON ROYAL HORTICULTURAL.

NOVEMBER 6, 7.—The annual autumn exhibition of the above society was this year held in the Volunteer Artillery Drill Hall, Southamp-

ton, on these dates. This society, like many others this year, had not so many entries in the Chrysanthemum classes as usual, yet the quality of those seen was good.

Cut blooms in vases.—An important class was that for twelve Japanese blooms in distinct varieties, arranged in vases, three blooms in each vase. The 1st prize included the handsome Victoria Challenge Trophy and £7 in money. Mr. G. Hall (gr. to Dowager Lady ASHBURTON, Melchet Court, Romsey) easily secured the coveted position with large, heavy examples of Mrs. W. Knox, Mme. P. Radaelli, J. H. Salsbury, Magnificent, Bessie Godfrey, W. A. Etherington, Valerie Greenham, Edith Smith, Mrs. A. T. Miller, F. S. Vallis, and Mrs. H. Weeks. 2nd, Major CHICHESTER, Embley Park, Romsey (gr. Mr. B. Hollis).

Mr. HALL also won the first prize in the class for six white Japanese blooms of any two varieties, having Edith Smith and Marquise V. Venosta in superb condition. Mr. HOLLIS again followed.

A class was provided for twelve Japanese blooms in four varieties, open only to gardeners and amateurs. W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Mr. G. Ellwood), was an easy first with typical blooms of F. S. Vallis, Beauty of Leigh, and Mrs. F. W. Vallis. 2nd, Mr. H. Pearce (gr. to Mrs. TRAGETT, Awbridge Danes, Romsey).

Nine competed in a class for single-flowered varieties. Mr. ELLWOOD won with good examples of Edith Pagram, Roupell Beauty, Nelly Richardson, and Mary Anderson. Mr. E. Cook (gr. to A. F. FYNN, Esq., Bassett), closely followed.

Cut Blooms shown on boards.—The principal class was for 24 Japanese blooms in not fewer than 16 varieties. Mr. HALL had the best among four; 2nd, Mr. HOLLIS. Mr. HALL also won in the class for 12 Japanese blooms, distinct.

Incurved varieties were few in number, but they were of neat finish, and especially that was the case in the premier exhibit of 18 blooms shown by Mr. W. Neville (gr. to F. W. FLIGHT, Esq., Cornstiles, Twyford, Winchester). Mr. A. J. Marsh (gr. to M. HODGSON, Esq., Morton House, Kingsworthy, Winchester), who secured the 2nd prize, was awarded the 1st place for 12 varieties. The example of F. S. Vallis in Mr. HALL'S "Cup" group was adjudged the best Japanese bloom in the show. A similar honour was conferred on Mme. Ferlat in Mr. NEVILLE'S exhibit.

Groups of Chrysanthemums arranged for effect were of moderate quality. Mr. F. GREEN, Swaythling, showed the winning group. Chrysanthemum plants suitable for conservatory decoration made a good display. Mr. A. COOPER, 115, Hill Lane, Southampton, was 1st amongst four entrants. Bush-grown plants were really well represented. Mr. C. DYMOTT won in the class for four plants with freely-flowered examples. A group of miscellaneous plants arranged for effect, shown by Mr. E. WILLS, was an interesting exhibit.

Displays of fruits and vegetables added much interest to the show. J. WILLIS FLEMING, Esq., Chilworth, Romsey (gr. Mr Mitchell), had the best Grapes. Sir S. MONTAGUE, Bart., South Stoneham House, Southampton (gr. Mr. T. Hall), was 1st for four dishes of dessert Apples. Mrs. AUSTIN, Bishop's Waltham (gr. Mr. G. Barnes), secured a similar position with kitchen varieties.

In the vegetable section, Mr. ELLWOOD won Messrs. Toogood's special prize offered for six dishes of vegetables.

ULSTER HORTICULTURAL.

NOVEMBER 6, 7.—A Chrysanthemum show was held by this society in St. George's Market, Belfast, on these dates, and, despite the somewhat inclement weather, there was a good attendance of the public. This society is encouraging fruit growing in the North of Ireland. Lord Dudley has kindly presented a cup, value £30, for the best orchard of over two acres in extent; and Messrs. Gibson, jewellers, Belfast, have supplemented this with another trophy for the best orchard under two acres, in Ulster. The Dudley Cup has now been won outright by Mr. FELIX COYNE, Vernersbridge. Lord Aberdeen has kindly offered another cup in 1st place.

Plants.—The 1st prize for a group of Chrysanthemums was secured by JOHN FORGER, Esq., Edna Grana, Belfast (gr. Mr. J. M'Ilveen). 2nd, A. D. LEMON, Esq. (gr. Mr. H. Kirkpatrick). The best group of single Chrysanthemums was shown by J. BRADLEY, Esq., Knock (gr. Mr. J. Vance). A class was also provided for a group of miscellaneous stove and greenhouse plants, the premier honour for which was secured by FRANK WORKMAN, Esq., The Moat, Belfast (gr. Mr. Thomas Culbert). The Begonias Gloire de Lorraine and Turnford Hall, shown by Mr. A. F. Grubb (gr. to Col. FORDE SEAFORDE, Co. Down) in this class were the finest ever seen in Belfast.

Cut Blooms.—JOHN JAMIESON, Esq., St. Marnock, Dublin (gr. Mr. J. L. McKellar) secured the 1st prize for 20 varieties of Japanese Chrysanthemums, three blooms of each variety. His best examples were Duchess of Sutherland, Lord Ludlow, Mrs. A. H. Lee, and M. Gustave Henry. 2nd, Countess of CALEDON (gr. Mr. J. Small), among whose blooms were fine examples of W. R. Church and Mr. C. Beckett. The best 36 blooms of Japanese Chrysanthemums, in 12 varieties, were shown by THOS. H. TORRENS, Esq., Whiteabbey (gr. Mr. J. Robinson).

Col. SHARMAN CRAWFORD (gr. M. J. Whytock) led in the class for 24 Japanese blooms, three of each variety; and THOS. TORRENS, Esq., was 1st for 48 Japanese blooms against rather weaker competition than usually obtains at Belfast in this class.

Fruit and Vegetables.—The best table of fruits, measuring 8 feet by 4 feet, was shown by the Marquis of DOWNSHIRE (gr. Mr. T. Bradshaw); and the same exhibitor was also 1st for six bunches of Grapes, in not more than two of one variety. The premier collection of 24 dishes of Apples was shown by JOHN JAMIESON, Esq.

Among vegetables the best collection of 12 kinds was shown by Lord ALDENHAM, Elstree, Herts (gr. Mr. Beckett), who also secured many other 1st prizes for vegetables.

NURSERYMEN'S EXHIBITS.

Mr. HUGH DICKSON, Belmont, Belfast, showed a fine collection of stove and greenhouse plants; also an array of hardy fruits and a table of American Carnations.

Messrs. A. DICKSON & SONS, Newtownards, excelled in a table of hardy fruit, numbering 141 dishes. The same firm also put up a stand of floral emblems.

Messrs. FRANK SMITH & Co., High Street, Belfast, had a very pretty stand of floral devices.

Mr. MAGEE, Knock, Belfast, staged a splendid group of stove and greenhouse plants.

Messrs. HEATH, Cheltenham, showed American Carnations. *J. B. C.*

SOUTHEND-ON-SEA CHRYSANTHEMUM.

NOVEMBER 6, 7.—The Southend-on-Sea and District Horticultural Society held its annual exhibition of Chrysanthemums, fruits, and vegetables in the Kursaal on the foregoing dates in fine weather. The show, on the whole, was an improvement upon the Society's previous exhibitions, there being 30 entries more this than in any previous year, and the open and amateur classes were fairly well filled. Mr. R. MAY, Stroud Green, Rochford, was the most successful exhibitor in the open classes, taking six first and five second prizes, and two silver medals of the N.C.S., while Mr. H. E. CAMPKIN, Boscombe Road, Southend-on-Sea, was the most successful amateur exhibitor, securing seven first prizes and one of the N.C. Society's silver medals, as well as the special prize offered by Dr. G. F. Jones for the best bloom in the show, with a fine flower of Bessie Godfrey.

Groups of Chrysanthemums in pots were arranged by Messrs. GARDNER BROTHERS, York Road Nurseries, Mr. HANSOM, and Messrs. MARTIN RAY & SONS, Floral Nurseries, Southend, who took the prizes in the order in which their names appear. The prizes for a group of miscellaneous plants, arranged for effect, went to Mr. DAVEY, Leigh Nurseries, Leigh-on-Sea; Messrs. GARDNER BROTHERS, and Messrs. M. RAY & SONS in the order named.

Cut blooms were shown well in both the open and the amateur classes, the gentlemen whose names are given above being the most successful exhibitors in the respective classes, both staging large, even-sized, fresh blooms of F. S. Vallis, Duchess of Sutherland, Mrs. G. Mileham, Bessie Godfrey, Buttercup, &c.

FRUIT.

Mr G. F. SMITH, Prittlewell, Southend-on-Sea, was 1st for two bunches of white Grapes, showing Foster's Seedling in good condition. Mr. Eisdon (gr. to N. RUGG, Esq.), Hamlet Court, Westcliff-on-Sea, was 1st in the class for black Grapes, with good bunches of Black Alicante.

Mr R. MAY won in the class for six varieties of dessert Apples, showing even, clean, well-coloured fruits; 2nd, Mr. W. MEEKINGS; Mr. MURRELL, who was 3rd for dessert kinds, secured the 1st place in the corresponding class for six dishes of culinary Apples. Mr. W. A. Voss, Hope Cottage, Rayleigh, won the 1st prize for three dishes of dessert varieties of Apples, and Mr. A. GREEN had the best three dishes of kitchen varieties. Mr. EPPS was easily 1st in the class for six dishes of Pears, distinct, showing good fruits, and the Rev. J. O. REAY, Prittlewell, had the best three dishes of these fruits.

There were several entries in a class for a tray or basket of six varieties of vegetables. The exhibit shown by Mr. W. MEEKINGS was placed 1st; 2nd, Mr. R. MAY.

CROYDON CHRYSANTHEMUM.

NOVEMBER 6, 7.—Among the earlier shows around London, that held at Croydon on the 6th and 7th of this month served to indicate the condition of Chrysanthemum blooms and plants in the south. The flowers are smaller than usual, although the colouring, in many varieties, appears to be brighter than in seasons of the usual character.

The show was held in the Public Hall, George Street, a place admirably adapted for the holding of a flower show. We were pleased to note the complete abolition of the show board, and the substitution of tall vases in its place, to the greater effectiveness of the exhibits.

OPEN CLASSES.

Fifteen Incurveds and an equal number of Japanese varieties, distinct.—1st, Mr. Frank Bible (gr. to Prince HATZFELDT, Draycot Park, Chippenham), who showed of Incurveds, Buttercup, Margaret Brown, Mark Tourle, Le Peyron, Lady Isabel, C. H. Curtis, Godfrey's Eclipse, Hilda George, Amber Gem, Mrs. Hall, Mme. Denyer, G. W. Mathew, and F. Frierslien. The Japanese varieties included Waldeck Rosseau, Mme. Radaelli, W. Jinks, G. Vallis, Marquis Venosta, Mildred Ware, Algernon Davis, W. Hetherington, and General Hutton. Every bloom was well developed, and of fine form.

Twenty blooms, not fewer than four distinct varieties.—Mr. F. BIBLE was again 1st, with three blooms of A. F. Miller, 1 Beatrice May, 1 Bessie Godfrey, 5 President Viger, 4 of F. S. Vallis, 1 of Algernon Davis, 2 of R. F. Vallis, and 2 Mrs. Knox, all of them very fine blooms. 2nd, Mr. C. Lane (gr. to E. H. COLES, Esq., Burntwood, Caterham).

Ten Japanese blooms.—Mr. G. PREBBLE won the 1st prize, with Hy. Perkins, Mrs. G. Mileham, Mrs. F. W. Vallis, Mrs. A. H. Lee, and Lady Henderson. 2nd, Mr. G. Gooch (gr. to F. W. JONES, Esq., Worcester Lodge, Selhurst).

Ten blooms, Incurved, one or more varieties.—The winner of the 1st prize was Mr. G. EDWARDS, Windmill Cottages, Shirley, with middle-sized blooms of C. H. Curtis, Mrs. F. Judson, and Duchess of Fife. 2nd, Mr. C. Prebble (gr. to E. PRESTON, Esq., Shirleyhurst, Croydon), with Baron Hirsch, Duchess of Fife, Miss F. Southam, and Frank Hammond.

Some of the small competitions contained excellent blooms, as in the class for five Incurved blooms, in which Mr. G. EDWARDS was 1st with C. H. Curtis.

The same number of Japanese blooms (five) enabled Mr. BIBLE to come in 1st with White Venosta in perfection.

OPEN TO AMATEURS.

Mrs. N. WRIGHTSON, 55, Elgin Road, Croydon, won the 1st prize for ten Japanese blooms in not fewer than five distinct varieties, with large, well-developed blooms of, among others, Hy. Perkins and Mrs. C. Beckett. 2nd, Mr. C. R. CLARK, Neville Road, with Mrs. H. Weeks and Gustave Henry.

PLANTS AND GROUPS.

Plants of single-flowered varieties were numerously shown, and were of large-size bushes of 3-5 feet in height, abundantly flowered, and they

were employed in filling corners of the Hall, and masking bare walls, forming capital foils to the more formal arrangements.

BRISTOL CHRYSANTHEMUM

NOVEMBER 6, 7, 8.—The above society held its annual exhibition upon these dates in the Colston Hall, Bristol. As is invariably the case, the show was a grand one, though some of the classes for Chrysanthemums were not so well filled as in former years, but the quality of the blooms and the beauty of the groups left little to be desired. Fruit, especially Apples, was staged in capital condition. The Bristol Amateur Chrysanthemum Society held a successful show in connection with the older society. A most praiseworthy act of this society is the interest it takes in the gardening charities by arranging a stall for the sale of flowers, &c., for their benefit.

Groups.—A class was provided for a group of miscellaneous plants occupying an area of 12 feet by 8 feet. The best was shown by Mrs. H. St. VINCENT AMES, Cote House (gr. Mr. Bannester), who had Chrysanthemums, relieved with Palms, Codiæums (Crotons), Eulalias, &c., and edged with Ferns. J. B. BRAIN, Esq. (gr. Mr. J. Attwell) and Dr. R. C. W. EAGER were placed equal 2nd.

Only one competitor staged in a class for a group of Chrysanthemums occupying a floor space of 50 square feet—Mr. G. W. Harford (gr. to H. V. BARNARD, Esq.), whose plants carried large fresh blooms, and were chiefly of yellow varieties.

Cut Blooms.—In the important class for 36 Japanese blooms, the FROME FLOWER & FRUIT Co. secured the leading place for the third consecutive time, and thus become possessors of the Challenge Vase presented by the Colston Hall Co. The stand of blooms was composed of large, deep, fresh flowers of the varieties F. S. Vallis, Mrs. A. H. Lees, Mrs. Mease, Reginald Vallis, Mrs. W. Knox, &c. 2nd, Mr. DRAKE, Cathays, Cardiff, with somewhat smaller blooms.

Twelve Japanese blooms, distinct.—Mr. CARPENTER was again 1st with splendidly-grown flowers, including Mad. Marguerite de Mon, Mrs. A. T. Miller, Lady Harmsworth, &c. Dr. CROPPER again followed, but he reversed these positions in the class for twelve Japanese blooms in a class open only to amateurs and gentlemen's gardeners.

Chrysanthemums staged in vases were some of the best blooms in the show. The best six Japanese blooms of any variety were shown by the FROME FLOWER & FRUIT Co. The best half-dozen blooms of a white Japanese variety were shown by Mr. CARPENTER, the variety being Mrs. A. T. Miller. The FROME FLOWER & FRUIT Co. were again 1st for six blooms of a yellow variety, showing Mrs. W. Knox.

Twenty-four Incurved varieties.—Mr. DRAKE was the only exhibitor in this class, but he staged a beautiful set of large blooms, and was deservedly awarded the 1st prize. His leading blooms were Buttercup, S. W. Matthews, Lady Isabel, Mrs. F. Judson, Emblème Poitevin, and Mad. Ferlat.

FRUIT.

A. GIBBS, Esq., Tyntesfield, Bristol (gr. Mr. T. Wilkinson) staged the best collection of six varieties, having Muscat of Alexandria and Alicante Grapes, Golden Reinette Apple, Doyenné du Comice Pear, and Coe's Golden Drop Plum. 2nd, Mr. Strugnell (gr. to the Rt. Hon. W. LONG, Rood Ashton Park).

Mr. WILKINSON was also 1st for Muscat of Alexandria Grapes, and also for Black Alicante Grapes, amongst seven exhibitors. A class for Lady Downes brought five exhibitors, among whom Mr. WILKINSON was again to the fore, and he also had the best bunches of Mrs. Pince.

Apples.—The best six dishes of dessert varieties were shown by Mr. J. H. VIRGO; while Mr. BANNESTER led in the class for four dessert varieties. The best six dishes of culinary varieties amongst eight exhibitors were those shown by Mr. WOODMAN; and Mr. STRUGNELL had the best six dishes of Pears.

Vegetables.—Mr. BAKER won the principal prize offered by Messrs. Jas. Carter and Co. for six dishes; 2nd, Mr. STRUGNELL; and Mr. BENFIELD won in the class for prizes offered by Messrs. J. Garaway & Co.

NON-COMPETITIVE EXHIBITS.

These made a splendid addition to the show. A fine collection of Apples and Pears was staged by Messrs. BUNYARD & Co., Maidstone. Messrs. GARAWAY & Co., Clifton, Bristol, and Messrs. COOLING & SONS, of Bath, staged some fine fruit. Messrs. PARKER & SONS, Bristol, and Mrs. ROGERS arranged floral devices. Messrs. CYPHER & SON, Cheltenham, staged Orchids.

HEREFORD FRUIT AND CHRYSANTHEMUM.

NOVEMBER 7, 8.—This society's annual show, held in the Shire Hall, Hereford, on these dates, may be classed amongst the best of the society's exhibitions. For Apples, more than 50 classes were provided. Pears were fairly well shown, but not in such large quantities as at previous shows. Interesting and instructive were the exhibits in the classes for packed fruit, while farm roots, grain and hops were provided for in the schedule. Comparatively few classes were allotted to Chrysanthemums, and only two groups of these flowers were arranged.

FRUIT CLASSES.

The principal class for Apples was that for 50 dishes, arranged in an area of 70 square feet, with ornamental leaves for decoration. Among three exhibits, that staged by the KING'S ACRE NURSERY Co. was awarded the 1st prize, the fruits being clean and highly coloured; 2nd, Mr. WHITING, Credenhill, Hereford, who had an almost equally fine collection.

Mr. WOOLTON, Byford, Hereford, was successful in the class for 30 dishes of Apples, with splendid fruits of well-known varieties.

Twenty-four dishes of Apples, twelve culinary, twelve dessert. This class was only open to amateurs, but several good exhibits were staged, that from Mrs. BLASHILL, Bridge Sollars, being placed 1st. The most notable varieties were Emperor Alexander, Golden Noble, Lord Derby, Royal Jubilee, Mannington Pearmain, Allington Pippin, and Cox's Pippin, &c.

Twelve dishes of Apples.—This was another strongly-contested class, and in the leading collection, staged by Mr. J. LEE, Higher Bebington, some of the largest fruits in the show were to be found. They included Gascoyne's Seedling (perfectly green in colour), Gloria Mundi, Lord Derby, Lady Henniker, and Warner's King; 2nd, Rev. G. H. DEVONPORT, who also staged a splendid set.

Eight dishes of Apples, any market variety.—Mr. GRINROD, Whitfield Gardens, Hereford, set up splendid fruits of Warner's King, Stirling Castle, Newton Wonder, The Queen, Loddington Pippin, Lane's Prince Albert, &c., with which he secured chief honours.

Amongst the single dish classes for Apples were many of the best fruits in the show.

Pears.—Mr. Humphries, gardener to the Earl of CHESTERFIELD, Holme Lacy, was, as is usual, successful in the class for 24 dishes of these fruits, though he has staged better collections in some former years. Amongst his best examples were Doyenné du Comice, Beurré Diel, Pitmaston Duchess, Durondeau, and Doyenné d'Alençon.

Sir J. COTTERELL, Garnons, Hereford (gr. Mr. Fox), was placed 1st in the class for 12 varieties of Pears, having good, clean fruits of President d'Osmonville, Easter Beurré, Beurré de Jonghe, Doyenné du Comice, &c.; G. H. HADFIELD, Esq., Moraston, Ross (gr. Mr. Rick), who followed, showed almost equally good fruits of Glou Morceau, Durondeau, Beurré Hardy, Doyenné du Comice, &c.

Eight dishes of Pears.—The best fruits in this class were shown by Rev. G. H. DEVONPORT; 2nd, Mr. BLASHILL.

The best dish of Pears in the show was staged by Rev. H. DEVONPORT, the variety Doyenné du Comice. The best dessert Apples were Cox's Orange Pippin, staged by Messrs. GETTING C. NEWTON, and the best culinary Apples, Warner's King, staged by Mr. GRINROD.

VEGETABLES.

Mr. J. WILSON, Commercial Street, Hereford, offered prizes for a collection of 10 dishes of vegetables, which attracted six excellent collections. The best was shown by Mr. GRINROD, who had Celery, Parsnips, Autumn Giant Cauliflower, Potatos, selected Carrots, Beet, Onions, &c.; 2nd, Mr. J. Davis, gardener to W. C. KING, King Coxy.

CHRYSANTHEMUMS.

Twenty-four Japanese blooms.—A. N. FOSTER, Esq., Brockhampton Court (gr. Mr. H. Parrott), was the leading exhibitor in this class. He had good blooms of F. S. Vallis, Mrs. Bryant, George Lawrance, Walter Jinks, Godfrey's Pride, Bessie Godfrey, W. Duckham, &c.

Twelve Japanese blooms, four in vases.—The KING'S ACRE NURSERY Co. were placed 1st in this class, with large, highly-coloured examples of W. R. Church, F. S. Vallis, A. C. Doyle, and Mrs. J. E. Dunne.

GROUPS.

The winning group has already been referred to. It was arranged by the KING'S ACRE NURSERY Co., Hereford, and was composed of splendidly grown plants, possessed of large, fresh blooms, the colours being charmingly blended.

TORQUAY CHRYSANTHEMUM.

NOVEMBER 8.—This annual Chrysanthemum Show was held in the large hall of the Bath Saloons, Torquay, on the above date. The exhibition was a great success, entries being very numerous and the exhibits of high quality. Unfortunately, a persistently wet day prevented a large attendance. Perhaps the finest feature of the show was the winter-flowering Begonia Mrs. Heal, six pots of which took the 1st prize for Mrs. WREY in the class for Begonias. These plants were between 18 inches and 2 feet in height and breadth, and were covered with large deep-red flowers, being excellent specimens of culture. The silver challenge cup presented by Lady Albertha Lopes for the best group of Chrysanthemums was won by Mr. R. H. LEE, last year's winner; Mr. DUNDEE HOOPER followed. Specimen Chrysanthemum plants were admirably shown, Mrs. TOTTENHAM gaining two 1st prizes with well-grown and profusely-flowered plants, the same lady also won the special prize for six vases of cut Chrysanthemums, and the 1st prize for flowering table plants. In the open class for 36 Japanese blooms the 1st prize was awarded to Rev. T. SHEEPSHANKS for a fine stand in which Algernon Davies, Mrs. J. E. Dunne, Mme. Carnot, W. R. Church, F. S. Vallis, and General Hutton were particularly good. In the class for 12 Japanese blooms Rev. T. SHEEPSHANKS again secured the 1st prize.

Fruit of good quality was staged.

NURSERYMEN'S EXHIBITS.

These filled three sides of the hall, and made a bright setting to the flowers and plants in the competitive classes. Messrs. R. VEITCH & SON, Exeter, had a representative collection of berry-bearing plants and autumnal foliage. A collection of Tree Carnations, large blooms of Japanese Chrysanthemums, and a varied assortment of Apples. The DEVON ROSARY, Torquay, showed pot Chrysanthemums, many greenhouse plants, Crotons, Ferns, Palms, and Pandanus, while they had a fine collection of Apples. Messrs. F. C. SMALE & SON, Torquay, exhibited miscellaneous flowering plants: Messrs. BURRIDGE & SONS, Paignton, flowering and foliage plants. Messrs. ALLWARD had single Chrysanthemums and winter-flowering Begonias interspersed with Palms and Ferns.

CARDIFF CHRYSANTHEMUM.

NOVEMBER 7, 8.—The 20th annual show held in connection with the Cardiff Chrysanthemum Society took place in the Park Hall, Cardiff, on the foregoing dates. Although the entries this year were not so numerous as on many former occasions, the quality of the blooms shown was (notwithstanding the rather unfavourable weather experienced during the past few weeks) well up to the usual high standard. From all but the financial standpoint, the exhibition was a great success.

CUT BLOOMS.

In the open class, Mr. G. W. DRAKE, nurseryman, Cathays, Cardiff, won the 1st prize and challenge cup for a collection of eight vases of specimen blooms of eight distinct varieties of Japanese Chrysanthemums, each vase containing three blooms of one variety. The varieties—all of first-class quality—were: Madame Paolo Radaelli, Duchess of Sutherland, Valerie Greenham, President Viger, F. S. Vallis, Reginald Vallis, Chrysanthemiste, Montigny, and Bessie

Godfrey. As this is the third time the present winner has secured the cup, it now becomes his own property. Mrs. WILLIAMS, Bryn Glas, Newport (gr. Mr. J. Duff), the winner of the cup last year, was 2nd.

For 24 incurved blooms of not fewer than 12 varieties, Mr. GEO. DRAKE was placed first, some of his best blooms being Buttercup, G. W. Matthews, Duchess of Fife, Emblème Poitevin, Nellie S. Threlfall, and W. Pascoe. The 2nd prize went to W. PITT, Esq., Abergavenny (gr. Mr. H. Townsend), who also won the 1st prize for a collection of 12 blooms, distinct varieties, of Japanese, among which were Duchess of Sutherland, Mrs. G. Mileham, Chrysanthemiste Montigny, and Mr. H. Pitt.

In the amateurs' class A. T. STEPHENS, Esq., Sully (gr. Mr. J. Graham), was the winner of the 1st prize and a silver cup for a collection of 24 Japanese blooms in not fewer than 18 varieties. Some of the most striking varieties were Marquise V. Venosta, W. A. Etherington, Mrs. G. Mileham, and Madame Rivol. The Marquis of BUTE, Cardiff Castle (gr. Mr. H. Farmer), was 2nd.

The Marquis of BUTE was placed 1st for the best stand of 12 Japanese blooms in not fewer than six varieties. A silver medal was also awarded to this exhibit as being the best in its class.

F. PRIMAVASIE, Esq., Cardiff (gr. Mr. Webber), secured the 1st place for 12 blooms (any kind) in four varieties, three of each, President Viger, F. S. Vallis, Mad. P. Radaelli, were three of the best. Miss TALBOT, Margam (gr. Mr. Milner), was placed 2nd in this class, but won the 1st prize for six vases of cut bloom in six distinct varieties.

PLANTS.

More groups were staged this year than usual. Unfortunately, either the Chrysanthemum plant as now grown does not lend itself to artistic grouping, or gardeners are afraid to detract from the appearance of the individual blooms by adopting a novel mode of arrangement. As a consequence, groups of Chrysanthemums, as shown at exhibitions, are nothing other than uniform outlines faced with blooms, all the groups having the appearance of having been cast in one common mould. Even where choice foliage plants are introduced, the groups are allowed to remain too massive and uniform in character. The groups on the present occasion were no exception to the rule.

Mr. WILLIAMS, nurseryman, Cardiff, was awarded the 1st prize and a silver cup for a group of Chrysanthemums and foliage plants, arranged for effect in a space of 60 feet square. This competition was open to all comers, but the above was the only entry. Eulahias, Cocos Weddelliana, and different varieties of Crotons were the foliage plants used to lighten up the group.

The principal prize-winners for specimen bush plants (Chrysanthemums) were Messrs. W. TRESEDER, F. CARTRIGHT, G. NURSE, and Dr. WALLACE, all of Cardiff.

FRUIT.

The Apples and Pears were exceedingly good, the effects of the fine summer being evident in the highly-coloured fruits.

H. PITT, Esq., Abergavenny, was 1st for a collection of dessert fruit, distinct. These were Cox's Orange Pippin and Blenheim Pippin Apples, Pitmaston Duchess Pear, Taunton Hero Melon, and Coe's Golden Drop Plum; 2nd, Mr. THEO. THOMAS, Aberdare.

For a collection of culinary Apples, six dishes distinct, Mr. W. J. HOCKEY, Jetton, received the 1st prize.

Sir J. GUNN, Cardiff (gr. Mr. A. Dobbs), won the 1st prize and a silver cup for a collection of fruit, consisting of four dishes of culinary Apples, four dishes of dessert Apples, two dishes dessert Pears, and two dishes of culinary Pears. The dessert Apples shown were Blenheim Pippin, Cox's Orange Pippin, Allington Pippin, and King of the Pippins. The culinary sorts were Lord Derby, Peasgood's Nonsuch, Warner's King, and Gascoyne's Scarlet. The dessert Pears were Doyenné du Comice and Pitmaston Duchess.

MISCELLANEOUS EXHIBITS.

Mr. W. TRESEDER, nurseryman, Cardiff, carried off several 1st prizes for bouquets, sprays, wreaths, &c., and he was also awarded a silver medal for a remarkably fine collection of Dahlias. Messrs. CYPHER, Cheltenham, were awarded a gold medal for a fine display of Orchids, and Mr. BASHAM, Bassaleg, received a similar award for a choice collection of hardy fruit.

Certificates of Merit were voted to Messrs. CLIBRAN & SON for a collection of cut blooms of some of the newer varieties of Chrysanthemums; to the HEREFORD GRADING COMPANY for an exhibit of fruit, graded and packed in boxes ready for sending by rail; and to Messrs. S. TRESEDER & SON, nurserymen, Cardiff, for a beautiful collection of Tea Roses grown in the open.

PUTNEY AND WANDSWORTH CHRYSANTHEMUM.

NOVEMBER 7, 8.—This society brought together a very attractive exhibition in the Town Hall, Wandsworth, on the above dates. It is one of the oldest, as well as the most enthusiastic, of the suburban societies, the recent display being the twenty-ninth annual show it has held in the district.

The exhibition under notice was greatly enhanced by a magnificent group of choice foliage plants and Orchids in flower from the nurseries of Messrs. JAMES VEITCH & SONS. The group was similar to that shown by the same firm two days earlier at the Royal Horticultural Hall, Westminster, and contained the same handsome plant of Coccoloba pubescens, and pretty specimens of Codiæum, &c. Messrs. J. PEED & SONS, Roupell Park Nurseries, West Norwood, exhibited a collection of Apples and Pears; Mr. ROBERT NEAL, Trinity Road, Wandsworth, a group of miscellaneous plants; and other honorary exhibits were made by Mr. J. H. POLLOCK, Florist, Wandsworth; Messrs. FORDHAM & Co., Wandsworth (Palms, 12 feet high); and Messrs. MALTWOOD & SONS, Putney.

In the competitive classes there was great interest in that for a collection of Chrysanthemums shown in pots on a space of 10 feet by 5 feet. The 1st prize exhibit from Mr. R. Bradford (gr. to L. H. BROWN, Esq., Roehampton) was of the usual semi-circular, banked style, but, apart from its formality, the quality of the flowers it included deserved the highest praise. A smaller class of the same type was reserved for amateurs not employing a regular gardener, and in this competition a very creditable exhibit gained the 1st prize for Mr. T. P. YARHAM, 62, Mexfield Road, Wandsworth. Mr. J. Prentice (gr. to J. D. CHARRINGTON, Esq., Roehampton had the best group of miscellaneous plants, and the best cut Chrysanthemum blooms of Incurved varieties. The best Japanese blooms were grown by Mr. A. Smith (gr. to Madame STUART, The Convent, Roehampton), his exhibits in the classes for twenty-four cut blooms shown on boards, of 12 cut blooms, also on boards, and eight vases, each containing three blooms of a distinct variety, being particularly noticeable.

The best exhibits of single flowers were made by Mr. D. Anderson (gr. to the Dowager Countess of KINTORE, Wimbledon Park), who won most of the prizes for Chrysanthemum plants shown as specimens. Of "single-handed" gardeners who showed Chrysanthemums, the most successful was Mr. J. Dark (gr. to JAS. HOOKER, Esq., Putney).

The President, Sir J. W. LANCASTER, Putney Hill (gr. Mr. F. H. Goddard), showed admirable "table" plants; and Begonias were exhibited well by Mr. R. S. Barnett (gr. to P. MORTIMER, Esq., Wimbledon Park).

There were also very attractive exhibits of berried plants, bouquets, &c., Apples, Pears, Grapes, and vegetables, making altogether, as we have observed already, a very pretty exhibition. The hon. secretary is Mr. J. F. McLeod, and the acting secretary Mr. J. Reynolds, 53, Medfield Street, Roehampton.

COLCHESTER CHRYSANTHEMUM AND FRUIT.

NOVEMBER 8.—The autumn show of this society was held on this date, when excellent exhibits of Chrysanthemums, fruit, vegetables, and floral decorations were seen. The Chrysanthemums were equal to any seen at the society's shows of past years, and for a large group of these plants with foliage plants intermixed, and Ferns, Major-General LARPENT, of London (gr. Mr. J. Claydon) was an easy 1st prize winner with a splendid group. A class was also provided for a smaller group, and the prizes for these were awarded to Messrs. R. B. BEARD, W. LEGGET, and Major KEMBLE in the order named.

Major-General LARPENT had the best twelve plants of Chrysanthemums, the best six, the best Japanese, and the best plant of an Incurved variety.

Cut blooms.—The important class for twenty-four Japanese blooms saw C. S. MONTEFIORE, Esq., Stisted Hall (gr. Mr. B. Rogers), to the fore with splendid flowers that possessed great depth, and were richly coloured. The same exhibitor was also 1st for twelve Japanese blooms.

W. E. EYRES, Esq., Braintree (gr. Mr. J. Dodget), staged the best stand of Incurveds.

General LARPENT had the best Pompons in bunches, and also the best single varieties.

The Mayor of Colchester offered prizes for six vases of Chrysanthemums. Nearly two dozen competitors were seen, C. S. MONTEFIORE, Esq., winning, followed by Mr. STEPHENSON.

Fruit occupied much space, and the hardy fruit was excellent. Mr. MONTEFIORE was 1st for black Grapes. Rev. R. CHILTON had the best six dishes of dessert Apples, and the same exhibitor had the best six dishes of Pears.

Vegetables formed a special feature of the show, and the collections occupied much space, and were remarkable for their good quality.

STIRLING CHRYSANTHEMUM.

NOVEMBER 8, 9.—On these dates, the 17th annual show was held in the Albert Hall, Stirling. Compared with former years, the entries were limited in number; this, however, was compensated for by the good quality and the admirable arrangement of the exhibits to hand.

The principal class for cut blooms was that for eight vases, with three blooms in each in eight varieties. Mr. LUNT, Keir Gardens, Dunblane, secured the premier award (Hon. President's Cup) with clean, well-finished blooms of good size, Mrs. A. T. Miller, Reginald Vallis, Algernon Davies, and Miss Oliver Miller being most prominent in a capital lot.

The Corporation Cup for four vases, three blooms in each, was won by Mr. T. BAIRD, Alloa.

While specimen plants of Japanese varieties were not up to the usual standard, the 6-inch pot plants were again a feature of the show. Pompons were good, and "singles" better than any ever seen at a previous exhibition.

The usual entry was made of Roman Hyacinths, Primula sinensis, P. obconica, Begonia, Gloire de Lorraine, Lily of the Valley, Zonal Pelargoniums, Ferns and foliage plants.

Excellent Grapes came from Mr. LUNT and Mr. J. WALDIE, Dollarbeg; magnificent Pears from Mr. RITCHIE, Polmaise; and Apples from Mr. BOSWELL, Stirling. Good examples were seen of Apples (dessert), King of the Pippins, Ribston Pippin, Blenheim Pippin, Worcester Pearmain, Cox's Orange Pippin, and Ochiltree, a local variety. Culinary: Ecklinville Seedling, Lord Suffield, Warner's King, Stirling Castle, and Bismarck.

Vegetables were a meritorious display, Messrs. J. WALDIE, J. OGILVIE, M. CARRIGHAN, and BOSWELL showing well-grown produce.

Honorary exhibits came from Messrs. DRUMMOND & SONS, JOHN CRAIG, Mrs. TASKER, Stirling, a vase filled with 27 varieties of outdoor Chrysanthemums, and an exhibit of Carrots from A. ROBERTSON, Gorgunnock.

DEVON & EXETER HORTICULTURAL.

NOVEMBER 9.—The 24th exhibition of this society, held in the Victoria Hall, Exeter, on this date, was one of the best for many years past. The exhibits were principally Chrysanthemums and fruits, the competition in many of the fruit classes being very keen. In Chrysanthemums some remarkably fine blooms were shown in the amateurs' classes.

In the class for a group of Chrysanthemums relieved with foliage plants, W. BROCK, Esq. (gr. Mr. W. Rowland) was the only exhibitor and he was awarded the 1st prize. The best table decorated with Chrysanthemums, with any kind of foliage added, was shown by Miss KINGDON, of Taddyforde. Cyclamen, Poinsettias, Violets, and Begonia Gloire de Lorraine were well shown by Mr. MARK FARRANT in a class for plants in pots.

Thirty Japanese blooms, in ten distinct varieties.—H. TOWNSEND, Esq., Exeter (gr. Mr. Phillips) was awarded the 1st prize for a fine lot of blooms, the best being Margaret de Mans, Bessie Godfrey, Alice Byron, and Godfrey's Pride. 2nd, Mr. W. BROCK.

A collection of cut blooms.—A class was provided for a collection of cut blooms of the various sections of Chrysanthemums, the examples to include not fewer than six out of the ten enumerated in the N.C.S. catalogue. Two competitors staged, the judges awarding the 1st prize to Mr. W. BROCK, and the 2nd to Mr. C. M. COLLINGWOOD, Exeter. In the opinion of some persons, these awards should have been reversed.

Twenty-four Japanese blooms, in not fewer than eighteen distinct varieties.—Rev. T. SHEEPSHANKS, Chudleigh (gr. Mr. Dunkley), won the premier place with a splendid lot of flowers, including a specimen of Madame Carnot, to which was awarded the prize offered for the best bloom in the show. To this exhibit was also awarded the silver medal for the best exhibit staged by a professional gardener.

Eighteen Japanese blooms, and not fewer than twelve distinct varieties in the collection.—These had to be shown in vases, three blooms in a vase. The 1st prize was won by J. QUICK, Esq. (gr. Mr. F. Perret), and he was followed by Col. GUNDRY, Broadhembury (gr. Mr. Shackleton). Here, again, a frequently expressed opinion was that the awards should have been transposed.

Twelve Japanese blooms, distinct. First honours in this class were taken by Mr. W. NIX, an amateur, whose exhibit was also awarded the National Chrysanthemum Society's certificate for general excellence.

Mr. J. R. GULSON had the best six blooms of a white variety (Mrs. J. Lewis); Mr. J. QUICK, the best six blooms of a yellow variety (F. S. Vallis). Mr. GULSON was also 1st for six blooms of any other colour than white or yellow.

Mr. C. M. COLLINGWOOD was 1st for six Incurved blooms; Mr. C. HAM, Exeter, who was 2nd, was awarded a medal for the best Incurved bloom in the show.

FRUIT CLASSES.

Sir DUDLEY DUCKWORTH KING, Wear House (gr. Mr. S. Baker), had the best Grapes, his varieties being Gros Colmar and Black Alicante.

Competition was exceedingly keen in a class for 24 Apples—12 dessert and 12 culinary varieties. The 1st prize was won by B. H. HILL, Esq. (gr. Mr. G. Lock). 2nd, Sir JOHN FERGUSON DAVIE, Creedy Park (gr. Mr. Seward), whose exhibit was little inferior to the 1st prize collection. Mr. J. F. G. BANNATYNE, Haldon House (gr. Mr. T. Ellicott) was 1st for six varieties of dessert kinds; and Mr. BANNATYNE was 1st for six varieties of culinary Apples, distinct. In both the foregoing classes there were 10 competitors. The single dish classes were also keenly contested.

Mr. B. H. HILL, Newcombes, showed the best nine dishes of Pears—six dessert and three culinary kinds. The 1st prize for a single specimen Pear of any variety was won by Mr. G. R. P. PERRIAM, of Exmouth, with an enormous fruit of Beurré Diel, which scaled 31 oz.!

Non-competitive exhibits were of unusual excellence, and were contributed by Messrs. Robert Veitch & Son, of the Royal Nurseries, Exeter; Messrs. Sutton & Sons, Reading; Messrs. Geo. Bunyard & Co., Maidstone; Mr. W. J. Godfrey, Exmouth; Mr. W. J. Coombes, Exeter; Messrs. Jarman & Co., Chard; and Messrs. Sanders & Biss, Exeter. *A. H.*

BIRMINGHAM & MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT AND HORTICULTURAL.

NOVEMBER 13, 14, 15.—The annual exhibition of this well-established and progressive society was held in the spacious Bingley Hall, the biggest in Birmingham, on the above dates, and was a pronounced success, showing a decided improvement on previous exhibitions of the society, particularly so over that held a year ago.

This year's schedule has been revised. The old-fashioned method of showing Chrysanthemums in tubes on boards is not now recognised by this society, greater prominence and encouragement being given to the much more effective manner of displaying the blooms in vases. The number of varieties in the "vase" classes has been reduced, together with the number of flowers in each vase, which are now three instead of five, yet notwithstanding the smaller number of flowers required, the prize money has been increased, and, judging from the greater number of entries (nearly four times more than those recorded last year), the committee has reason to be satisfied with the change.

Thus, in a class for eight varieties, five blooms of each variety, the first prize last year was £5 10s., but this has been raised to £6, and was offered for 18 blooms in six varieties.

The principal new class was one for Chrysanthemum blooms arranged with cut foliage and foliage plants, the 1st prize including a silver Challenge Shield. Four competitors entered, and their exhibits all differed in design, but were all in excellent taste.

The schedule was divided into 127 classes—15 more than last year—and comprised classes for groups and specimen plants of Chrysanthemums, cut flowers, miscellaneous foliage and flowering plants, exotic and hardy fruit, and vegetables, for which a sum of about £50 was offered. Some of the foremost vegetable growers in the country exhibit at Birmingham each November.

This year a change was made in the arrangement of the exhibits, and, instead of unsightly subjects meeting the visitor immediately on entering the hall, choice groups of Chrysanthemums were to be seen, with floral devices, &c., beyond. So great was the demand for space in the body of the hall that it was found necessary to place the table decorations—always a feature at Birmingham—in the side galleries.

Apples were shown in great quantity, variety, and excellent condition.

It was decided to give 5 per cent. of the takings at the doors to the Birmingham General Hospital.

GROUPS.

In the principal class, for a group of Chrysanthemum plants, the 1st prize consisted of a silver Challenge Cup and £10. The best group, in which quality of bloom, variety, and general effect were the essential points, was staged by Messrs. W. SANFORD & Co., Hall Green, Birmingham. The plants carried heavy, well-finished blooms, principally of Japanese varieties, and the exhibit was beautifully arranged with foliage plants. For the 2nd and 3rd positions there was but little to choose between the groups staged by Messrs. J. RANDALL & SONS, Hatfield Nursery, Shirley, and Mr. A. Cryer (gr. to J. A. KENRICK, Esq., Berrow Court, Edgbaston). Both exhibitors adopted the same style of arrangement, but the judges gave the awards in the order named.

As the Cup has been won twice by Messrs. SANFORD & Co., it now becomes their property.

In a similar but smaller class than the last-named, Mr. J. AUSTIN, Sparkbrook, beat three competitors. His collection consisted largely of Japanese and single-flowered varieties, artistically arranged with bamboos, grasses, &c. 2nd, A. CLARKE, Esq., Edgbaston (gr. Mr. J. Eason).

Another group class was that for a collection of decorative varieties to be shown as grown. Messrs. W. SANFORD & Co., Hall Green, carried off the leading prize of £4 with a pleasing exhibit. 2nd, Mr. C. H. HERBERT, Acocks Green.

SPECIMEN PLANTS.

The best exhibits of six large flowering varieties of Chrysanthemums (Japanese included); the best six Japanese (dissimilar varieties); the best large flowering plant (Japanese excluded); and one of a Japanese variety were staged by F. MARTINEAU, Esq., West Hill, Edgbaston (gr. Mr. O. Brasier); J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer) being 2nd in these classes, but he was first in the class for three Japanese Chrysanthemums distinct.

CUT BLOOMS.

Great interest was centred in the new class provided for cut blooms of any variety, arranged on floor space measuring 20 feet by 12 feet. Cut foliage and foliage plants were admissible, and no restriction was made as to vases or stands.

Four prizes were offered, and divided as follows:—1st, £15 and a silver Challenge Shield, the latter to be held by the exhibitor during the ensuing year; 2nd, £10; 3rd, £7 10s.; 4th, £5.

The premier award was gained by Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, whose principal flowers were displayed on large tripods, that varied in height from about 5 feet 6 inches to 7 feet 6 inches, each being filled with large, shapely blooms, and a few sprays of autumn-tinted foliage. The groundwork consisted of an assortment of smaller flowers in ornamental jars and vases of different sizes, the whole being relieved with Codiæums, Ferns, &c.

Messrs. SANFORD & Co., Hall Green, Birmingham, were placed 2nd with a beautifully arranged collection of handsome flowers, the next in order of merit being Messrs. JAS. RANDALL & SONS, Shirley, Birmingham.

Vase classes.—Blooms shown in vases were unusually numerous, and of good quality. Some of the finest blooms in these classes were shown by Lt.-Col. BEECH, Coventry (gr. Mr. E. J. Brooks). The Dowager Lady HINDLIP, Hadzor, Droitwich (gr. Mr. C. Crooks); and Mr. R. BARNES, Malvern.

Eighteen Japanese blooms.—The schedule required six distinct varieties on stems 18 inches in length. The 1st prize was secured by Lt.-Col. BEECH (gr. Mr. E. J. Brooks), who had magnificent blooms of the varieties Henry Perkins, Mrs W. Knox, F. S. Vallis, Walter Jinks, President Viger, and Mrs. A. T. Miller, the last-named being one of the best flowers in the show. 2nd, Sir A. MUNTZ, M.P., Rugby (gr. Mr. H. Blakeway), with a very fine lot; 3rd, Mr. W. IGGULDEN, Frome.

Twelve Japanese blooms.—This class was for four dissimilar varieties, three blooms of each variety. The 1st prize fell to Lt.-Col. BEECH (gr. Mr. E. J. Brooks), who was also 1st for two Japanese varieties, three blooms of each, M. FIRTH, Esq., Leicester (gr. Mr. F. J. Clark), being 2nd in the former, and the Dowager Lady HINDLIP, Hadzor, Droitwich (gr. Mr. C. Crooks), 2nd in the latter class.

Pink variety.—The best vase of any pink-coloured variety came from the last-named exhibitor, who had lovely examples of Olive Miller; 2nd, Mr. W. IGGULDEN, Frome, with handsome blooms of Mrs. Barkley.

Single flowers.—Mr. R. BARNES, Malvern, staged four varieties of single Chrysanthemums, and well deserved the first award. He was also placed 1st for the best half-dozen decorative varieties.

INCURVED VARIETIES.

The best four Incurved flowers came from A. JAMES, Esq., Rugby (gr. Mr. A. Chandler). T. W. PIGGOTT, Esq., Moseley (gr. Mr. R. Bullock), also had four varieties, and succeeded in beating all competitors resident within four miles of the centre of Birmingham.

A great many prizes were also awarded to local exhibitors.

Reports of Societies continued on p. xiv.

Obituary.

THE LATE ROBERT PINCE GLENDINNING.

ROBERT PINCE GLENDINNING.—By the death, on the 9th inst., at his residence, Merton Road, Wimbledon, of Mr. R. P. Glendinning, there has passed away a worthy horticulturist who was widely known and greatly respected throughout the British Isles, and whose death, which terminated a long period of intense suffering, will be regretted by many friends. Mr. Glendinning came of a good gardening stock. He was born in Exeter

on November 22, 1840, and was the third son of Mr. Robert Glendinning, who, in the middle of the last century, was a nurseryman of some repute at Chiswick, and who, singular to relate, also died on November 9. Leaving Chiswick some 35 years ago, Mr. Glendinning went for a period to the then great Edinburgh nurseries of Messrs. Peter Lawson & Sons, and afterwards was for several years with the late Mr. B. S. Williams at Holloway. Subsequently he went as manager to the West Coates Nursery of Messrs. Downie & Laird, and next of Messrs. R. B. Laird & Sons, Limited, and eight years afterwards, on the death of Mr. B. S. Williams, returned to Holloway as general manager, a position from which he retired several years ago. A man of tall stature and commanding presence, combined with a kindly, gentle nature and unfailing courtesy, Mr. Glendinning was "always a gentleman," and enjoyed the regard and esteem of all who knew him.

ENQUIRIES AND REPLIES.

DIRECTORY OF FRENCH GARDENERS.—On p. 332 a correspondent asked for French and German Directories. There are: *Annuaire Belge de l'Horticulture, Annuaire Général Horticole, Annuaire International d'Horticulture*, by Lehmann: 1 German, 2 Foreign, *Annuaire des primeuristes* and *Almanach des Jardiniers*, any of which can be got from the Librairie Horticole, 84 bis, Rue de Grenelle, Paris. *C. Harman Payne.* [For Germany see Thalacker's *Adressbuch*, published at Leipzig—Gohlis.—ED.]

TRUFFLES.—*T. Z.* would be glad if some reader could inform him of an instance where truffle cultivation is attempted in this country, and where he would be likely to obtain spores or "stock" in any form for planting.

ANSWERS TO CORRESPONDENTS.

BOOKS: *Anxious Inquirer.* The first you mention is out of date though still useful for reference. The second and third are more valuable, but you must ask a second-hand bookseller to tell you their market value. We have no means of knowing.

CABBAGE LEAF DISEASE: *F. G. B.* Your Cabbage-leaves are badly infested with Sphærella brassicicola, associated with which is a little of the Black mould, Alternaria Brassicæ. It is not uncommon (see Dr. Cooke's *Fungoid Pests of Cultivated Plants*, p. 82) upon Cabbage-leaves, but it is seldom so bad a pest as in the specimens you send. You state that the disease has appeared from year to year. Evidently dead leaves on the ground in previous years have filled the soil with spores which germinate in the spring and infest the young plants. All diseased leaves should be collected and burned, the soil disinfected, and no Cabbages or Cauliflowers should be planted on the same site for two or three years. You must use strong measures to clear the soil of the fungus spores before you can hope to grow healthy plants in the same ground again. Healthy plants in other parts of the garden should be syringed with fungicide, to prevent the disease attacking them.

CARNATIONS DISEASED: *A. H. H.* The plants are badly affected with the Carnation disease, caused by a fungus Helminthosporium. Your better plan will be to burn the diseased stock, and to afterwards thoroughly clear the house in which they have been grown with a weak solution of carbolic acid and warm water. Spraying with potassium sulphide (liver of sulphur) is said to arrest the spread of the fungus, but it blackens the paint.

COLLUS THYRSOIDEUS: *H. C. L.* The appearances are consistent with too much moisture from drip or some other cause. We find neither fungus nor insect. See p. 332 last week.

COPPER SULPHATE: *J. McC.* If you are likely to use a very large quantity of the liquid as a "wash," it will be safer to cover the Box edging beforehand.

GARDENERS IN BOTHY: *S. J. M.* We believe that it is only the head gardener who is considered by law to be a domestic servant. The employer is not bound to pay the doctor's bill for attending a servant, unless the doctor was summoned at the employer's instance.

GRUBS ON SAXIFRAGA UMBROSA: *S. S. H.* The grubs are weevils. Trap them with pieces of Carrots, Potatos, Turnips, or such-like vegetables. Next spring, plant the Saxifrage (London Pride) in a fresh site.

INSECTS ON EPIDENDRUMS: *T. C., Norwood.* The specimens, all of which are imperfect, appear to be young Porcellis scaber, probably the commonest English wood-louse.

IRISES: *B. L.* There need be no fear of failure being brought about through the early planting of such bulbous Irises as those named in your letter, and the end of September is a good time for such an operation. There is danger, however, in planting these species insufficiently deep. If the bulbs are 4 inches deep they will not take much harm, and if not so deep as this a covering of cocoa-nut fibre refuse will meet the case, or light soil even, as the growth will spear through quite well. We have passed through a summer and early autumn of exceptional heat, and the warm condition of the soil, coupled with almost continuous sun-heat till quite recently, have caused not a few freshly planted subjects to start very promptly into growth. You cannot have anything better than quite dry silver-sand for storing the bulbs of Iris Tingitana in after lifting. Place a layer of sand in a shallow box, then the bulbs, and add a further layer of sand. Place the box on a shelf in a well-ventilated outhouse or shed, or a greenhouse will do quite well. We have kept the bulbs quite well in a flower pot placed in such conditions. This species makes much of its growth during the early autumn, therefore early planting is desirable, selecting a warm and favoured position in which to insert the bulbs 5 inches deep, employing much sand about the bulbs and in the soil around them.

LANDSCAPE GARDENER: *J. E. H.* Providing you have an aptitude for landscape gardening, you will do well to commence by seeking employment where you may partake in some such work as the alteration and laying-out of grounds. Afterwards you might enter some nursery, most nurseries having a landscape department. This would, in a measure, fit you for the service of some firm who make landscape gardening a speciality. You will require a knowledge of geometry, other branches of art will also be of service. You should study mensuration, also land surveying, levelling, &c., of which you would probably get an insight in your practical work. Plan drawing and reading, are also important qualifications in the profession. You will need a knowledge of many and varied subjects to fit you for the work of landscape gardening, all of which will never make you a master of the craft unless you possess a taste and an inclination for this branch of gardening. "Landscape gardeners are not made, they are born."

MANGO: *J. S.* Obtain Mr. Woodrow's book on "The Mango," which treats of the culture and varieties of this tropical fruit. Price, 1s., from our publishing department.

MAY-FLOWERING TULIPS: *Select.* The following is a list of varieties with their colours, suitable for planting in an open border for the purpose of furnishing flowers for cutting:—Bouton d'Or (rich gold), Bronze King, Caledonia (orange-scarlet), Coronation-Scarlet (vermilion-scarlet), flava (lemon-yellow), fulgens (vermilion-crimson), Gesneriana spatulata (rich crimson-scarlet), Inglescombe Pink, Inglescombe Scarlet, La merveille (salmon-rose), macrospila (crimson-scarlet, fragrant), The Fawn (rosy-fawn), Mauriana (scarlet and gold), Picotee (white), Dream (soft heliotrope to grey), General Kohler (deep crimson), Leonardo da Vinci (blackish maroon), Mrs. Krelage (soft rose), Nora Ware (silver lilac), White Queen, Rev. H. Ewbank (heliotrope), and Professor Rauwenhoff (cherry-rose with white base).

MUSHROOMS: *E. F. C.* The two large Agarics are the Wood Mushroom, Agaricus sylvaticus, and they may be eaten, but they are not equal in quality to some other species. On the Continent they are mostly regarded as doubtful. The small specimens are the Fairy Ring Champignon Marasmius oreades. The other appears to be a species of Flammula, but it was in too bad a condition when received to properly determine its name.

MYRTLE: *Constant Reader.* We think there would be no danger in removing the plant at the present time, providing the operation is performed carefully, and after the roots have been well soaked with water. Keep as much soil to the roots as possible.

NAMES OF FLOWERS AND FRUITS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *Zola.* Apples: 1, King of the Pippins; 2, Reinette du Caux (Syn. Dutch Mignonne); 3, American Mother. Pears: 1, Holmer; 2, Bon Chrêtien Fondant; 3, Knight's Monarch.—*T. H. B.* 1, American Mother, 2, Old Gilliflower (not Cornish); 3, Rymer; 4, The Queen; 6 and 7 are both Beurré Diel. One is better grown and somewhat earlier than the other, which accounts for their difference in appearance.—*J. M. L.* Swan's Egg. 1 and 2, rotten; 3, Royal Somerset; 4, Lemon Reinette.

NAMES OF PLANTS: *E. A. H.* 1, Cupressus pisifera, var. filifera; 2, Arbutus Unedo; 3, Cotoneaster Simonsi; 4, Andromeda floribunda.—*M. M.* Cotoneaster affinis.—*J. W.* Rhodotypos kerrioides, Japan.—*Cambria.* 1, Diervilla rosea; 2 and 3, both forms of Veronica cupressoides (see fig. in *Gardeners' Chronicle*, January 7, 1888, p. 20).—*L. H.* Aster ericoides (type).—*Roath Park.* 1, Cupressus torulosa; 2, Crepis sibirica.—*F. L.* Sequoia sempervirens, the red-wood of California.—*F. C.* We cannot undertake to name varieties of Ivies; send them to some grower who has a collection.—*T. E.* 1, Promenæa stapeloides; 2, Aspasia lunata; 3, Odontoglossum crinitum.—*J. S.* 1, Pteris cretica albolineata. 2, Adiantum affine, Asplenium bulbiferum, 4, Pteris cretica cristata; 5, Pteris tremula, 6, Pteris longifolia.—*J. T.* 1, Anthurium Andreanum atrosanguineum; 2, Anthurium Andreanum delicatum; 3, Vanda tricolor.—*G. W. S.* Abies Pinsapo, Spanish Silver Fir.

THUYA DOLABRATA: *Cambria.* It is somewhat late to insert cuttings of Conifers in November, as it is better for these to become well callused before winter. However, with suitable provision, in the shape of a cold frame and some good porous soil, you will meet with a certain amount of success even at this late season. Be careful to prevent any excess of moisture in the frame, and ventilate in the morning to allow the excess of atmospheric moisture to escape. You would meet with greater success if a little bottom heat were provided in the frame. An article on the propagation of plants, including Conifers, is unavoidably crowded out this week.

TO KEEP WALNUTS: *A. S.* Why not treat them in the same manner as is usual in respect to Filberts. Make a layer of nuts and then place over them a layer of salt, repeating the process as often as necessary. The salt will prevent any mould, and at the same time keep the nuts in an agreeably moist condition.

VINE LEAVES WITH EXTRA COLOUR: *G. C., Bangor.* The attractive colour is not due to the presence of disease, but the unusual weather during October may have had something to do with it. Probably the soil contains an unusual amount of potash.

WORMS IN LAWNS: *R. A. F.* (1) Dissolve half an ounce of corrosive sublimate (POISON) in 15 gallons of water, and apply it over the lawn, and when the worms come to the surface sweep them up. If fowls eat them they will be poisoned. (2) If you mix a peck of freshly-made quicklime in 40 gallons of water, allowing it to stand until clear, and then apply the liquid from a rose watering-pot, it will serve to bring the worms to the surface. (3) You can obtain from Messrs. Cooper, Taber & Co., Ltd., 90 and 92, Southwark Street, London, S.E., a preparation which is known as "Chinese Worm Soap," which we have proved to be very valuable for the purpose, and easy of application.

COMMUNICATIONS RECEIVED.—H. J. V.—W. E. G.—W. W.—J. O'B.—W. G. S.—C. F. B., Cuba—W., Mallow—J. S.—W. B.—H. F., Geneva.—F. B. (thanks for One Shilling, which has been placed in the Gardeners' Orphan Fund Box.—Geo. Hutt.—G. B.—W. R. C. (Kindly say when you sent up the photograph of the pot Vines)—C. & Son—T. H. B.—J. Mc.—C. P.—A. H.—Ponica—T. W. C.—F. L. E. P.—W. C.—J. W.—P. D. W.—Lanarth—T. S.—F. T. J. T.—J. F.—A. H.—N. Y.—R. P. B.—A. T.—E. J.—A. L. W.—M. F. M.—L. C. W.—W. H.—G. H.

ŒNOTHERA (GODETIA) SCHAMINI (HORT.), A VARIETY OF NEAT HABIT; COLOUR OF FLOWERS ROSY-PINK.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle

No. 1,039.—SATURDAY, November 24, 1906.

CONTENTS.

ILLUSTRATIONS.

THE LONGEVITY OF SEEDS.

THIS is an interesting and much discussed subject. Certainly, as M. Paul Becquerel remarks in a recent number of the *Comptes Rendus*, the longevity of seeds varies not merely with the species but in different individuals of the same species, as it is dependent on a great number of external and internal factors to which the seed is subject, and according to how and where it is stored.

The temperature and hygrometric condition of the atmosphere, light, the depth at which the seed is buried in the ground, bacteria, and the degree of permeability of the teguments of the seed, the nature of its nutritive reserves, and its degree of dryness, are among the causes which directly act on the vitality of the embryo. Many observers have studied the question and have dealt with isolated cases, but the only general work, and that containing the most numerous and exact facts, is still that of Alphonse de Candolle. In 1840 he sowed seeds of 368 species which he had himself gathered and kept in packets, sheltered from damp and light for fourteen years. He found that, of these 368 species, only 17 retained their germinating power, and these but feebly. The species belonged to three families: Malvaceæ five out of ten, Leguminosæ nine out of forty-five, Labiatæ one out of thirty*.

Thanks to the kindness of M. Costantin, "professeur de culture" at the Museum, and to the assistance of M. Caille, "chef du service de la Grainetérie," who placed at M. Becquerel's disposal all the oldest seeds the date of the arrival of which at the laboratory was exactly known, he was able to carry on De Candolle's work.

The experiments were made with nearly 550 species belonging to 30 of the most important families of Monocotyledons and Dicotyledons, the seeds of which had been gathered from 25 to 135 years previously. The seeds of each species, usually to the minimum number of ten, were carefully soaked in sterilised water, then partly decorticated when their coats appeared too impermeable. Thus prepared they were placed on damp, aseptic, moistened cotton wool, in a vessel covered with a sheet of glass, which was kept in a stove at a steady temperature of 28deg. C.= 83deg. F. Under these conditions 18 species out of the thirty of Leguminosæ were raised. In the genus Nelumbium three species germinated, viz., Nelumbium codophyllum, ripened in 1850; N. asperifolium, ripened in 1858; and N. speciosum, ripened in 1888.†

Of Malvaceæ fifteen species were raised: Lavatera, pseudo-Olbia, dating from 1842, and one out of fourteen species of Labiatæ, viz., Stachys nepetæfolia, the seeds of which had been stored since 1829.

Many seeds are enumerated which did not germinate at all.

Certain seeds are often described by various observers as being capable of preserving, when in the soil, their faculty of germination for many years, and even for several centuries. The fact of their sudden appearance in certain localities where they have never before been seen, after changes of soil, cutting down woods, or the drying or filling up of ponds, is not sufficient to justify this supposition.

Changes in the conditions of the surroundings and an infinite multitude of influences, such as transport by means of water, wind, birds, animals, and men, offer far more likely explanations of this sudden appearance of certain species. And this seems the more likely since examination of old seed kept in packets protected from light, water, cold, and fungus moulds (as is not often the case under natural conditions) shows us that, owing to the extreme permeability of their skin, the oxydation of their nutritive reserves, and the disorganisation of the embryo, they have lost all possibility of living.

The only seeds which have been proved to preserve their germinating power for more than 80 years are those of Acacia bicapsularis, Cytisus biflorus, and Leucæna leucocephala, which are protected by a thick skin and possess reserves little subject to oxydation.

Experiments made with an apparatus described in the *Comptes Rendus*, 1904, p. 1347, enabled M. Becquerel to ascertain the important biological fact that in these seeds impermeability of all the parts of the skin to the gases of the atmosphere has been realised naturally in a manner as perfect as if it had been induced artificially by drying in a vacuum by the aid of caustic baryta and heat.‡

Consequently, we have here an example of life remaining dormant for more than 80 years, all gaseous interchanges between these seeds and the atmosphere having been completely interrupted.

If an embryo enclosed within a coating hermetically closed has respired, it must have done so imperceptibly, with the expenditure of an infinitesimal quantity of gas since, at the end of so long a time, it has not yet used up all the oxygen that it must have contained inside its cells.§

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* Alph. de Candolle, *Sur la durée relative de la faculté de germer.* (Ann. Sc. Nat. Serie III., t. vi., p. 383).

† M. Y. Poisson caused the seeds of Nelumbium luteum gathered in 1848 to germinate in 1902.

‡ In experiments on the skins of seeds described before the Paris Academy of Science in 1905 Joseph Gola demonstrated that in nature, seeds with impermeable coats which do not swell even in water are extremely frequent in Leguminosæ and Malvaceæ.

§ If in this paper no mention is made of the famous case of the longevity of seed from Cæsar's granaries, Mérovingian tombs, and those of the Pharaohs, it is, says M. Becquerel, because De Candolle, Decaisne, and more recently Gain, working with authentic specimens, have shown the baseless nature of these legends.

ROCK-GARDENS.

(Continued from page 304.)

THE ROCKY DEFILE.

Another type of rock-garden that offers many advantages to the cultivator, but which cannot be considered an aid to the garden landscape is that modelled on the lines of a rocky defile or mountain entourage. This type has several essential characteristics. It must be self-contained, lead from one place to another, or describe a circuit, and its walls should be high enough to shut out such parts of the garden proper as would clash with the rocky scenery it exhibits.

The visitor to such a rockery should be unable to see anything but rocks, rock-plants, soil and the pathway, and the sky above him as he passes through it. Such trees as would appear above the rock strata must not be dominant, but of the nature of scrub, dwarf and branch forms of popular Conifers, &c.—the tallest in the far background will accentuate the rift or defile all the more if their boles are not seen. One can suggest as a model for such a rock-garden some rapid stream that has carved its way through soft rock for centuries—its course varied by the hardness of the stone in places—and in others the recesses in the rock forming low and shallow caverns will suggest water erosion. Such a watercourse becomes our pathway—its banks our rocky defile, with certain modifications. In common with most garden scenes, a change of vista is desirable at every turn, hence one may fittingly trace the course of our rocky defile in serpentine form so that every bend gives one a full view of every plant and stone placed immediately beyond such a bend.

If the site is quite flat, and possessed of no natural undulations, however slight, an easy way of varying its surface presents itself, and, incidentally, some justification for the existence of stone in natural strata is secured.

Assuming that a wide cutting of any length and shape, but not less than 9 feet deep, is decided upon, one should not begin excavating at either end, but at the centre, digging there 9 feet from the top crust and wheeling the soil to form low banks at both ends, working, in fact, from the natural level at the ends to a 9-foot pit at the centre, sloping the cutting gradually to the centre. The soil placed on either bank at the ends serves two purposes. It does away with the need of steps—never a desirable feature—and it allows of a "natural" stratum of stone being formed at the natural level of the soil, and which would crop up from beneath the soil

so deposited. The low banks of soil at the rockery extremities will make excellent beds for shrubs and low trees, that will hide the junction of the rockery with the garden proper and give the designer much-needed height of vegetation at each entrance, thus preventing any possibility of his rocky formations appearing to be where one never finds them in nature—above the surface of the soil of a dead level. One can suggest that no rock formation should be visible from outside, that every stone laid should appear to be part of a natural formation. Big stones placed on end may serve as milestones or as guides to traffic, but they cannot be considered in their proper position when placed pile upon pile at the entrances to rock gardens as a kind of advertisement of similar vagaries to be found inside the portals they literally form. The shape of our cutting may vary according to taste or circumstance; it may be a simple defile with shelving sides; it may be a rift with precipitous walls in places, leading to one or more open amphitheatres of rock-scenery, or one may dig recesses into the banks, and huge bluffs may project to the pathway itself; it may have a bog bed at its centre, or recessed into its banks; it may have a waterfall or drip-pool, but there should be some observance of natural laws in providing such features. One never sees a waterfall coursing over a mountain's summit, and yet one has seen a waterfall coursing over the highest boulder in a rockery, the only source of which could have been a brick wall 20 yards distant!

Wherever there is a bluff projecting to the rockery pathway there must be a recessed rock bed on the opposite side to match it in essential features, and wherever there is a bog bed let it be where a bog should be, lower than the pathway itself, and at the lowest part of the rockery. I have already considered the entrance to a rockery should be of tree and shrub and not of boulders, and will now describe the rocky defile

AS IT SHOULD APPEAR,

instead of attempting to build it with a pen.

Its entrance is flanked by low mounds covered with trees and shrubs of a dwarf character, and no suggestion of a rock garden is apparent till these are left behind. The first rocky formation occurs at the ground level, just projecting from the banks on both sides—a low, trailing series of boulders only, showing the uppermost stratum of the formation; the farther one goes down the defile the higher the formation rises, till at the centre bold masses of stones rose 9 or 10 feet high, big rifts in the formations occur in which groups of dwarf Conifers, Cotoneasters, Rosas, and other trailing plants form a tangle, the trees in the background lending an impression of distance to the vista. All around one are rocks in natural strata, poised in similar form to those described in the previous chapter on the out-crop rockery; "torrents" of soil and shale covered with plants skirt the large boulders, smaller stones out-crop from these "torrents" and every dominant rift and fissure the formation shows on one side has its counterpart on the other. No sign of the garden proper is to be seen, and the 9-foot cutting is only traceable where the sides are nearly perpendicular; the sloping and terraced banks receding here and there suggest twice their actual height. There are no piles of bare stones on end, every stone serves a purpose in holding up soil above it, and throughout the whole design there is uniformity of stratification, but the greatest superficial variety of form. There are rocky cracks for every Sempervivum, a fissure in which to root and a face of stone to cover for every plant that delights to drape a boulder, spacious chair-like recesses above and below the eye level for the colony of low-growing herb and shrub are there. No grand boulders dominate the scene and impress one with their magnitude, but there are giant bluff formed of smaller boulders bedded into the steeper banks that give massiveness to the scene in sufficient measure, their gaping seams offering the happiest conditions of life for hosts of Alpine plants.

Such then is a brief description of the rocky defile as it appears to me. Nothing in the nature of a wall or a series of steps is possible if one disposes the rocks in the freest possible way. If the designer keeps the natural formation of the rock well maintained throughout it does not matter how much he varies the surface, nor how widely dissevered are the prominent boulders one from the other, provided there is ample trace of rock formation behind the interspaces. A prevailing failing in rock-building is the use of too much stone in massive blocks without regard to its formation; such blocks offer no aid to the cultivator—he wants the greatest diversity of surface, the greatest variety of "habitat," and above all things he wants degrees of moisture varying from the sunny crevice to the peat bog, and the means of maintaining the requisite moisture supply from natural sources.

PLANTING

may be done during the building or immediately after the rockery is finished. All plants of easy growth and which will form part of the general rock-scheme should be planted first, all the carpeters, the rock shrubs, trees, bulbs, and other kinds that grow in ordinary soil and require no especial condition or care, but reserve the planting of difficult Alpines for several months. It may, and often does, happen that the carefully-prepared rift destined to receive Ramondias dries out too quickly, and that there is moisture oozing from the crevices prepared for some woolly Alpine—no one can correctly estimate how moisture will percolate in newly-moved soil and among newly-laid stones, but after several months have elapsed the rockery will have settled and positions for this or that plant will suggest themselves as ideal from the cultivator's and the artist's points of view. The true Alpine is a highly individualised plant; it can stand much buffeting by winds, it will starve for a long period without dying, but moisture at the wrong time, or in excess, or in the wrong place troubles it as nothing else can. Every soil-pocket the rockery contains should slope outwards to promote surface drainage, or should have a shelving base to promote drainage there. *G. P. Mallett.*

(To be continued.)

NEW PLANTS.

BESCHORNERIA PUBESCENS, BERGER.*

THE genus Beschorneria was founded in 1848 by Kunth on a plant previously described by the same author as Fourcroya tubiflora. Kunth says that his new genus is intermediate between Fourcroya and the sub-genus Littæa of Agave. However, it is more nearly related to Fourcroya, and there are even species of Fourcroya which have exactly the same appearance, when in leaf only. When in flower the differences between the two genera are readily perceived. Fourcroyas have campanulate, patent sepals and petals of an ovoid or elliptic shape, and short, very thickened filaments, whereas the flowers of Beschorneria are tubular, the segments being much longer and narrower, and the filaments thin and slender, and only very slightly thickened below the middle. Fourcroyas are larger plants, the inflorescence generally branched as in Agave, and without large bracts. In most cases they produce a large quantity of little bulbils instead of capsules, or even instead of flowers. Beschornerias, on the contrary, have shorter inflorescences with large, vividly-coloured bracts and rachids, and never produce bulbils.

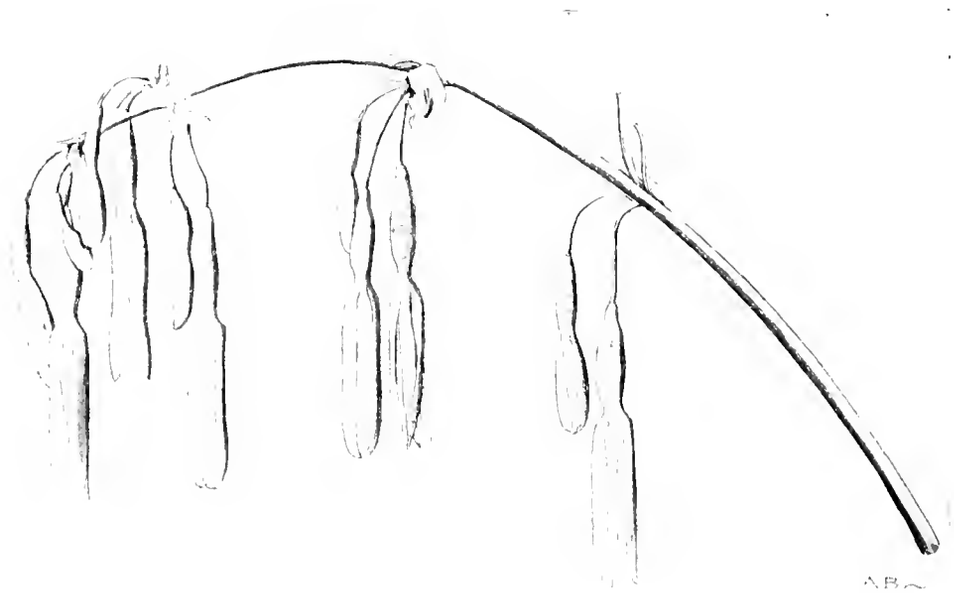


FIG. 138.—PART OF INFLORESCENCE OF BESCHORNERIA PUBESCENS: COLOUR OF FLOWERS GREEN, FADING TO YELLOW.

Baker describes, in his Handbook of Amaryllidaceous Plants, p. 161-162, five Beschornerias: B. tubiflora, Kunth (*Bot. Mag.*, 4,642), Toneliana, Jacobi (*Bot. Mag.*, 6,091), yuccoides, Hooker (*Bot. Mag.*, 5,203), bracteata, Jacobi (*Bot. Mag.*, 6,641), and Decosteriana, Baker (*Bot. Mag.*, 6,768). A sixth species was added by Sir Joseph Hooker in *Bot. Mag.*, 7,779, as B. Wrightii, named in honour of Mr. C. H. Wright. Besides these there exist some names left without any description by Lieut.-General Jacobi. Baker mentions in his handbook a B. superba, and in the *Kew*

* BESCHORNERIA PUBESCENS, *Berger, n. sp.* – Acaulis, multiceps. Folia 60 cm. longa et 5 cm. lata, lineari-lanceolata, longe acuminata, crasse carinata, subtus apicem versus aspera, glauca, ad margines aspere et minute denticulata. Pedunculus pro genere parvus, in paniculam 6-8 ramosam, 1·20-1·50 m. altus, basi vix 2 cm. diam., vacue bracteatus, laete ruber, glaber; bracteæ deltoideo-lanceolatæ, acuminatæ, glabræ, infimæ 8-10 cm. longæ, superiores minores; flores 3-4 ex fasciculo; pedicelli 2-4 cm. longi, glabri, nutantes; flores omnino pubescentes, virides, demum lutescentes; ovarium 25 mm. longum, conico-cylindratum; perianthii segmenta conniventia, linearia, limbo paullum patula, interiora latiora glabra, medio ad nervum tantum puberula; filamenta albida, basi leviter incrassata, antheræ 12 mm. longæ, vix vel brevissime exsertæ.—Mexico?—Culta in Horto Mortolensi, florunt mens. Maii & Junio, 1906.

Bulletin, 1892, p. 7, a B. viridiflora, which he had seen at La Mortola. Both these species are nothing but the B. yuccoides, Hooker, with the difference that these plants, having been cultivated in the open ground, were more vigorous than those grown in pots under glass. There also exists in gardens a B. argyrophylla, which, according to W. Watson, is identical with B. Decosteriana, Baker. Another plant has been cultivated since the end of last century under the name of B. californica. This is again a *nomen nudum*: I cannot find it recorded in any paper or book.

The species of Beschorneria are very closely related to each other, and even when in flower are not easily distinguished one from the other.

There has lately been a species in flower at La Mortola, which cannot be identified with any of those already described. It differs, firstly, in its pubescent flowers, whilst all the others are throughout glabrous, with the exception of B. Wrightii, Hooker, fil., with which, however, our little plant is not identical. This undescribed plant, which I call Beschorneria pubescens, is rather small; the leaves are 60cm. long and 5cm. broad, glaucous, rather stiff and fleshy along the mid-rib, underneath nearly smooth, and only rough near the tip, the margins finely but sharply denticulate. The inflorescence is 1.20 to 1.50m. high, rather slender, the bright red scape measuring 1½ to 2cm. in diameter, with about 6 to 8 erecto-patent branches. The flowers are fascicled in the axils of ovate bracts, green fading to yellow; pedicels slender, glabrous, 2 to 4cm. long; ovary 25mm. long, segments 38mm. long, both densely pubescent.

Beschornerias are attractive on account of their general appearance, which combines both vigour and grace; of their vivid red peduncles and bracts, the flowers themselves being green, and in fading turning to paler tints. They flower with us generally in April to May, and begin to ripen their capsules in July; this B. pubescens is later; it flowers from May to June.

After the flowering is over, the peduncle being strictly terminal, the rosettes begin to branch. The Beschornerias now in cultivation are very likely all descendants from the seeds introduced by Roezl in 1857. They are natives of Mexico; whether there be really a species in California, I do not know, though it seems possible. *Alwin Berger, La Mortola.*

IRISH GARDENS.

In the *Kew Bulletin* Mr. W. Watson has published the following notes of a visit paid to Ireland in the month of June last, when with Mr. Moore, of Glasnevin, he made a tour of some of the best Irish gardens.

Our special object, writes Mr. Watson, was to ascertain what had been done in the direction of establishing reputedly tender trees, shrubs, and perennial plants in the more favoured parts of the island. Both Mr. Moore and myself are fairly well acquainted with the gardens of South Cornwall and South Wales, where the climatic conditions are similar to those of the south and west of Ireland. We were therefore in a position to make comparisons and offer suggestions with regard to what might be tried in Ireland. The things we saw, however, far surpassed our most sanguine expectations. Ireland is favoured with a climate and, in many parts, a soil most suitable to gardening; and fortunately a number of people who are in a position to do so are making good use of their gardens and estates by devoting them to what may be termed experimental horticulture.

During the whole fortnight (the latter half of June) it rained daily, usually in the morning, the afternoons being hot and sunny. The vigour and healthy look of plants of all kinds under these conditions were delightful to behold. It might reasonably be said with regard to Irish gardening that the tools most needed are the saw, pruning hook, and knife. Generally the plants grow too fast for the gardener, and where plants are set at ordinary distances apart this has its disadvantages. The opinion formed after a fortnight's rapid visit to Ireland in June may not be worth much, but I have no hesitation in saying that of all the countries I have seen Ireland is as well provided by nature with conditions favourable to high-class land cultures—including agriculture, horticulture, and forestry—as the best. In the opinion of competent judges long resident in Ireland, the great need is intelligent labour; but so long as America and other countries hold out tempting inducements in the shape of better conditions of employment to the Irish workers, the best of them will go. If the most were made of the land by employing upon it the best of its people—and there are no better gardeners than Irishmen when they are allowed to use their intelligence—Ireland would soon become the richest instead of, as it is now, the poorest division of the United Kingdom.

Glasnevin

is to Ireland what Kew is to England. The collection of plants cultivated there is remarkably rich, in some departments the richest I know, whilst their condition is most satisfactory. The zeal of the late and present keepers in collecting, growing, and encouraging others to grow plants of all kinds has no doubt largely contributed to the spread of a taste for gardening in Ireland. This influence is now being turned to account by the Irish Board of Agriculture in the promotion of fruit and vegetable culture, Mr. Moore having the control of a training college where gardeners are taught the best methods of cultivation for the best kinds of fruit and vegetable, and then sent to different stations in the country, where model gardens are formed under Mr. Moore's superintendence. The men are trained gardeners before they enter the college, and in return for good work they are well paid all the time they are there. In this practical way a knowledge of high-class horticulture is being distributed over the country, and if this is only backed up by capital on the one hand and an intelligent treatment of the workers on the other, the effort cannot fail to have far-reaching results. During the time of my visit to the college a party of Scotch farmers were being shown round by Mr. Houston, the horticultural science instructor, who is also editor of an excellent little monthly journal devoted to Irish gardening. Agriculture is also assisted in the Glasnevin Botanic Gardens by the cultivation of plots of agricultural plants of all kinds, including grasses, plants yielding dyes, oils, fibres, tobacco, &c. Each plot bears a label showing name and time of sowing. There is also a garden of herbs and other economic plants.

Before leaving Glasnevin, note must be made of the "lions" of the collection, such as Nepenthes Rajah, a grand plant over 20 years old; Gleichenias, the largest specimens I have ever seen; Eulophiella peetersiana, a giant with leaves 4 feet long and 6 inches across; the fine specimens of Palms and Cycads; the extensive and well-grown collection of Orchids; the superb water-gardening, where Nymphæas are magnificent; Alpine plants and hardy Ferns, all in splendid health. Certainly the national botanic garden of Ireland is one of its most valuable assets.

Castlewellan.

The Earl of Annesley has made his garden famous throughout Europe. It is the best proof that Ireland is a great gardeners' country that in the lifetime of one man a hillside should have been turned into a grand "gallery" of trees and shrubs, in which giant specimens of many kinds of Coniferæ, looking at least a century old, of many kinds of New Zealand, Chilian, Californian, Himalayan, and South European trees and shrubs in the ruddest health, all testify to the genial character of the climate, the richness of the soil, and the sagacity of the proprietor. A full account of this garden, with photo-illustrations of some of the specimen plants, was recently published by the Earl of Annesley. As an indication of what may be found there I may mention the following:—Trees morindoides, a grand specimen tree, unique in Europe; Fagus cliffortiana; Cornus florida, a big bush in flower; Fejoia sellowiana, happy as a privet; Restio subverticellatus, three years outside and looking quite happy; Acer Hookeri; Cordyline indivisa, true, a grand plant with leaves 6 inches across; Lomatia ferruginea, a beautiful Protead, well set with flower buds and since figured for the *Botanical Magazine*. There was the usual display of Olearias, Trichospidarias, Azalea indica, Himalayan Rhododendrons, &c.

Kilmacurragh.

The garden of Mr. Thomas Acton is the most interesting in Ireland. Here there is little evidence of keep, but there has been much judgment in the planting, and generally things look happy. The soil appears to be deep and rich, and there is plenty of water. The great feature at the time of our visit was a tree of Embothrium coccineum in full bloom—it was 35 feet high with a spread of 30 feet, the trunk 15 inches through, and covered with flowers: this was planted as a baby about 30 years ago by Mr. Acton. Desfontainea spinosa, 12 feet through; Drimys Winteri, 30 feet high, in full bloom; Magnolia Campbelli, 25 feet high; Trichospidaria lanceolata Crinodendron hookerianum, 18 feet high, 10 feet through, the branches weighed down by the flowers—I never saw such a plant; Swammerdamia Antennaria, 10 feet high, 15 feet through, covered with flowers; and the Himalayan Rhododendrons—many finer than the finest in Cornwall—R. Keysii (9 feet), R. Delavayi (8 feet), R. decorum (10 feet), R. lacteum (6 feet), R. Royleï (12 feet), R. argenteum (18 feet), and many others—not thin bushes, but fat, mostly wider than high, and in grand health. It was worth the journey to Ireland to see R. Falconeri there—such a bush—18 feet high and 21 feet through, with six main branches each over 6 inches in diameter; it bore the remains of hundreds of flower-heads, and was in the midst of making new growth. I noted also the following (the figures in each case indicate height and spread of branches):—Podocarpus chilina, 22 feet; Saxegothea conspicua, 15 feet by 12 feet; Athrotaxis selaginoides, 34 feet; A. laxifolia, 20 feet; A. imbricata, 15 feet; Cupressus lusitanica, with a trunk 3 feet in diameter and a wide-spreading Oak-like head; Prumnopitys elegans, 25 feet; Podocarpus nubigenus, 20 feet; Libocedrus tetragona, 12 feet; Pinus aristata, 12 feet; Fagus Moorei, 14 feet; F. Cunninghamii, with a trunk 15 inches through, 40 feet high; Olea intermedia, a large tree; Cunninghamia sinensis, 25 feet; Laurelia aromatica, planted 30 years ago, now 40 feet high and growing with great vigour; Ilex latifolia, 12 feet; Myrtus Luma, 15 feet by 15 feet; Fuchsia excorticata, 15 feet; Senecio Greyi, 4 feet by 10 feet, a magnificent mass of yellow flowers. Ceratonia Siliqua, a big bush, has stood out for 30 years. The commoner trees are well represented. I noted Cupressus lawsoniana, 80 feet high; Abies Pindrow, 50 feet; and there is a grand avenue of Silver Firs leading up to the house. Mr. Acton, now an octogenarian, has been his own gardener all his life.

The only nursery we visited was that of Mr. T. Smith in the town of Newry. This is one of the most interesting gardens in Ireland. The collection is quite botanical in comprehensiveness; I doubt if there is another commercial collection of hardy plants like it anywhere. Not only for Ireland, but for England, the Continent, and even America this nursery is the

"shop" for the choice and rare among hardy plants. The proprietor, an Englishman, trained in the Chelsea nursery of Messrs. J. Veitch and Sons, is a keen collector and cultivator, and his knowledge of plants is quite exceptional. I found many plants there that were not in the Kew collection. The prominent features at the time of our visit were the Verbascums, large beds of them in full flower; Anchusa italica grandiflora, Saxifraga pyramidalis, Incarvillea Delavayi by the thousand, the racemes 2 feet high and the flowers enormous; Primulas, Dianthuses, Delphiniums, Helianthemums, and Roses. We spent the greater part of a day in the nursery before proceeding with Mr. Smith to Narrow Water, where there is a fine garden and collection of plants formed by the proprietor, Captain Hall.

Rodgersias, Gunneras, Nymphæas, Mimulus, Ourisia coccinea, Orchis foliosa, Japanese Iris, Myosotidium nobile, Parochetus communis, Gentians, Senecio macrophylla, and many others were very happily provided for. The stream sides were richly clothed with Ferns and other suitable plants.

(To be continued.)

THE GENUS ARAUCARIA.

Of the eight species of this genus in cultivation, the A. Cookii depicted at fig. 139 is one of the most handsome. The view shows the top of a plant growing in the Temperate House, Royal Gardens, Kew, and was taken from the gallery at a height of 30 feet. The plant usually produces a crop of cones every alternate year,

FIG. 139.—ARAUCARIA COOKII IN THE TEMPERATE HOUSE, KEW. *Photo E. J. Wallis.*

which, when fully developed, are from 2½ to 4 inches in length, and 2 to 3 inches in width. At the present time there are two beautiful and symmetrical specimens over 40 feet in height in the same house. The habit of the plant is distinct from all others, being columnar, this, together with its graceful habit, gives it quite a distinctive character, even when associated with other Conifers. It was introduced over half a century ago from New Caledonia—where it is said to reach a height of 200 feet—but is still far from common in gardens.

All the species are of great decorative value, while several of them are also valuable timber trees. Unfortunately, with the exception of the "Monkey Puzzle" (A. imbricata), they are all too tender for general culture in the open in this country. The "Bunya-Bunya" (A. Bidwillii) and the "Moreton-Bay Pine" (A. Cunninghamii) have been tried with moderate success in some of the milder parts of England.

The species readily adapt themselves, however, to pot-culture, and form useful subjects for the decoration of ball-rooms and also for vases when in the young state. The species most generally used for this purpose is the "Norfolk Island Pine" (A. excelsa). What is not generally known in regard to the thousands of plants of this species raised every year for market supply is that practically all of them are raised from cuttings. It is well known that seedlings of this plant are of extremely rapid growth, the internodes between each tier of branches being often 15 to 18 inches distant in a vigorous plant, and the plants soon become too tall for ordinary purposes. Plants raised from cuttings, on the contrary, form sturdy, little specimens, with successive tiers of branches at intervals of 2 to 4 inches, and retain this habit until they are several years of age.

Several varieties of A. excelsa are in cultivation, the best of these being the one known as "Göldieana," a variety from New Caledonia, and differing from the type in having much larger leaves and heavier habit.

There is a fine old specimen of the type of this species excelsa in the Temperate House, which is considerably over 100 years old, and is still a healthy, well-furnished specimen. The plant has long reached the roof, and has to be frequently topped in order to keep it within bounds. Its present height is 50 feet, and its diameter is 28 feet.

A. Balansæ is a native of New Caledonia, and is occasionally met with in gardens under the name of A. elegans. It possesses a loose, strag-

gling habit with age, with long, drooping branches, but when young is light and elegant. The Bunya-Bunya (A. Bidwillii) previously mentioned, is the giant of the genus. Its habit reminds one somewhat of that of A. imbricata, but it is much heavier, and more dense in all parts. There are two immense plants of this species at Kew in the Temperate House towering right up to the roof over 50 feet in height. These plants were raised from seed received at Kew in 1846.

Another species which has reached large dimensions in this house is A. Cunninghamii, also over 50 feet in height. This plant is one of the original ones introduced by Allan Cunningham in 1826. There is a considerable difference between juvenile and adult plants of this species, so much so that many take them to be entirely distinct species. In the juvenile stage the plant is possessed of long, slender

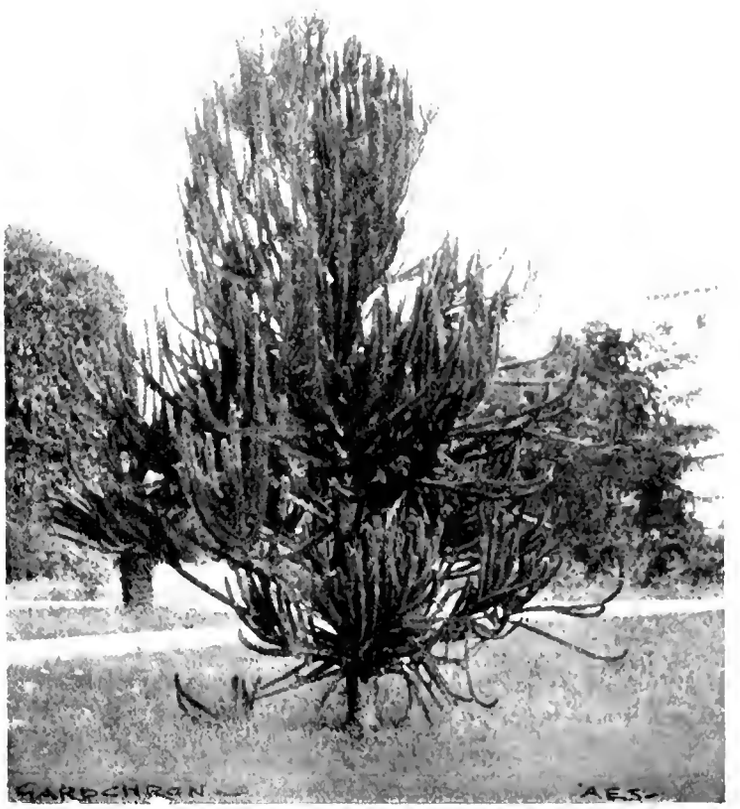


FIG. 140.—ARAUCARIA EXCELSA "GOLDIEANA" IN A PALERMO GARDEN.

foliage, and an extremely dense habit, while in the adult stage the leaves are short and the habit much more straggling.

A. Rulei is the gem of the genus, and is a rare plant in cultivation. The branches are rigid and horizontal, the branchlets being more or less pendulous. The leaves are densely arranged on the growths, about one inch in length, and of a deep rich green colour. A fine healthy specimen of this plant is to be seen in the Temperate House, planted out in a large bed in association with other plants.

Of the two South American species, the common Monkey Puzzle or Chilian Pine (A. imbricata) is well known to most gardeners. It thrives fairly well in most localities, but requires a well-sheltered position. The wood is of a somewhat brittle character, and the plant is apt to be greatly disfigured by rough winds or heavy snows. It is a fairly common plant in the mountain districts of Southern Chili. Abundance of moisture both at the roots and in the atmosphere is what the plant requires. Nowhere have I seen this plant in finer condition than on the Island of Fota, the property of Lord Barrymore, in the South of Ireland, where a number of huge specimens are to be seen, which produce abundance of good seeds most years. The seeds possess an agreeable nutty flavour, and are used for dessert in some parts of South America.

A. brasiliana is a native of the mountains of South Brazil, where it forms a tree from 50 to 100 feet high. It has little to recommend it, as compared with the preceding species. When young it possesses a loose, straggling habit, with few branches and long internodes. In the adult stage the plant loses all its lower branches, the trunk being terminated with a few long pendulous branches. Several varieties are in cultivation, the most decorative of which is the one known as "Sabiana," the foliage of which is of a pale, glaucous-blue colour. *C. T. Ruthe.*

[We reproduce a photograph kindly sent us by Mr. Sprenger, showing a specimen of A. excelsa "Goldieana" (fig. 140) growing in a Palermo garden.—ED.]

THE PROPAGATOR.

THE season has arrived when the cultivator must greatly curtail the propagation of garden plants for a few months, both as regards indoor and out-of-door subjects. The few, whose propagation may yet be forwarded, but not completed, will be mentioned in this article. Taking hardy plants first, the following may be raised in the open air: Vitis (Ampelopsis) quinquefolia; Alnus, in very moist soil but not always readily; Buxus, from short cuttings planted in the shade; Cornus, most species and varieties, excepting C. mascula, which is difficult to root; Coronilla Emerus, Eleagnus argenteus, E. fuscus, E. umbellatus and E. orientalis, Euonymus sempervirens and E. verrucosus, Hedera, Hippophae rhamnoides, Kerria japonica, Ligustrum vulgare, Lonicera, Periploca græca, Ribes, Salix, Sambucus, many of the Spiræas, Staphylea, Syringa, Viburnum opulus, &c. Most of these trees and shrubs do not suffer from the effects of frost, excepting in the more northern part of these islands, and cuttings do not, therefore, require to be inserted till the spring. The propagating beds should consist of sweet-smelling soil, rich in vegetable mould, and very sandy; and be formed in a warm position, sheltered from cold winds. As cuttings, the wood should be of the previous year's growth in the case of some of them, and the points of the shoots in others, and their length from 9 inches to 1 foot, cut squarely across below a bud. Not more than two buds should show above the ground level; and, in order to have each hole no deeper than is necessary, dibbers of various lengths should be used, the holes made perpendicular, and the cuttings very carefully inserted. The distance apart at which the cuttings may stand will vary from 3 to 5 inches for moderate growing plants, and from 6 to 12 inches for those of larger growth. The cuttings must be made quite firm in the soil.

Conifers.—Some species of coniferous plants can be raised from cuttings, although few of them make an erect tree-like growth unless leading shoots are selected for the purpose. More especially is this the case in Abies, Araucaria, Taxus, Torreya, Tsuga, and some of the Podocarpus which can only be raised from cuttings by taking the leader from seedling plants. The seedling plant puts forth shoots which have a tendency to grow erect on the removal of the leader, and these may also be employed as cuttings. Some of such mother plants should be kept for furnishing cuttings and scions for grafting. Many of the Mexican Pines develop from the stem, towards the base, small shoots which seldom develop, and these make good cuttings and root readily. I may name Pinus ayacahuite, P. cembroides, P. Gordoniana, P. Teocote, P. patula, P. Montezuma, &c.

The two most favourable seasons for taking and making cuttings are the spring, when growth begins, and from September to November, when it ceases. When the mother plant can be placed under glass, the propagating period may extend from September to February and March. Having cut the base of the cuttings smooth, and removed the needles (leaves) so far as the cuttings will enter the soil, place one cutting in a small pot, or several together, in small "cutting" pans provided with good drainage, and stand them in the propagating house having a warmth of 50° to 60° Fahr., with a bell glass over them. It is best to place them singly in small pots, the young plants having very brittle roots, which run great risks of being broken when the rooted cuttings are separated. When potted singly the plants should be returned to the bell glass in order to expedite the rooting process. Taxus and Sequoia may be rooted under *cloches* and bell glasses in the open border, in the shade, affording them protection against frost.

Seeing that Conifers take a long time to form roots, in every case the cuttings must be taken out of the soil once in two months and afforded fresh soil and pots, for the high temperature of the propagating house, water, and the confined air under the bell glasses set up decomposition of the soil, which is more hurtful than beneficial to the cuttings. A certain sign of decomposition in the soil is the black colour of the callus.

Besides the species of Conifers named above that may be grown from cuttings, there are also Athrotaxis, from well-ripened wood; Cephalotaxus, Chamæcyparis ericoides, Cryptomeria

(but this never makes a strong plant), Cunninghamia sinensis, if cuttings are taken from the base of the plant, for these make erect-growing plants, but side shoots never do so. Dacrydium is propagated readily from cuttings; D. elatum always remains weak, and does not live long. Dammara australis roots readily, but it is only erect in habit when a leader is chosen as the cutting; Fitzroya roots readily, as likewise does Libocedrus, but not so L. Doniana. Cuttings of Picea, taken from any part of the tree, make erect plants. Ginkgo (Salisburia) will grow from notched, ripe wood, placed in peat, in a shady northern aspect. Sciadopitys should be managed similarly to Athrotaxis. Of Taxus, only T. baccata fastigiata makes upright growth; Thujopsis will make roots as cuttings, and Sequoia gigantea will, if the mother plant is allowed to grow under glass till the month of June, afford cuttings which, if taken in the soft stage, form roots readily under a bell glass placed on the north side of a wall. When a callus has been formed, place them in fresh soil and stand them in the propagating house and they will form roots in a few weeks.

Roses, Camellias, and Aucubas may be side grafted during this month; the Camellias should be kept in a close case in moderate warmth. Ixoras of choice varieties may be grafted in heat on the commoner ones. Indian Azaleas on A. phœnicea, Arabias on A. trifoliata, a species which is readily propagated from cuttings, and lastly, Epiphyllum varieties on Cactus, Pereskia, Euphorbia canariensis and E. erosa. *F. M.*

NOTICES OF BOOKS.

WOBURN EXPERIMENTAL FRUIT FARM. Sixth Report. By His Grace the Duke of Bedford and Mr Spencer Pickering, F.R.S. (Eyre & Spottiswoode. Price 4s.)

At a time when there is quite a deluge of reports, chiefly in the form of circulars, calling attention to experiments designed for trade purposes, although often the object is as far as possible concealed, it is pleasant to meet such an honest and full report as this. As we read and re-read its pages in the light of both science and practice we became more and more interested and instructed and less inclined to be critical.

Although some of the statements may upset our preconceived ideas, we recognise the impartial, truth-seeking work which has dictated them. To select a few of the more important items: The authors call attention to the confusion which has so long existed in various works and leaflets on spraying, respecting caustic soda and caustic potash, and the carbonates, also as to such commercial terms as pearlash, potashes and the like. They indicate very clearly that very extensive experiments prove that caustic soda is the best, as well as the cheapest, to use, and in showing this they have done a most valuable work. There is, however, in this connection one small item that we would notice. Caustic potash, if used, would ultimately pass to the soil in a carbonated condition, and would become an available, and valuable, plant-food in many soils. Hence in discussing the economics of the subject, a small item should be allowed in favour of potash, but even then the difference in price shown by the authors would not merely be made up, so that it seems that after everything possible has been said the balance is decidedly in favour of caustic soda, and fruit-growers will do well to note this.

Experiments were made with ordinary paraffin emulsions, and it was found that scale-eggs, which were specially dealt with, were effectually destroyed when either the percentage of the paraffin or soap reached a high value, which value was, however, shown to be highly dangerous to the well-being or even the life, of the tree. It was found "that an emulsion which by itself was too weak to have much effect on the scale, would, with the addition of 2 per cent. of caustic soda, cause a complete destruction of the eggs. The proportion of paraffin used in this emulsion was 6 per cent. by volume and the soap need not exceed 0·5 per cent." Full directions for making are given, and also the prices of materials. The comparatively new insecticide lead arsenate, is dealt with, and growers are advised to obtain it ready made in the form of paste, instead of trying to make it for themselves. Ordinary Bordeaux Mixture (provided it be properly compounded) can be used mixed with it, without appreciable chemical interaction, and thus a combined insecticide and fungicide is produced.

Methods for removing moss and lichen are indicated. We notice, with pleasure, that attention is drawn to the fact that unhealthy conditions, improper care and the like, predispose to a weakly state and a much greater liability to pests and disease. Cultivators who have a thoroughly practical knowledge of the difficulties of getting workmen to do exactly as required, when one's own attention is for a time otherwise engaged, will greatly appreciate the significance of such a statement as: "In spraying a tree in the ordinary way, some parts must necessarily receive an overdose whilst others may be hardly wetted, and the results would be liable to much uncertainty in consequence."

It may be mentioned that the experiments included both laboratory and field work.

There are some valuable notes on "Silver Leaf," a disease which is causing considerable loss among the solter-wooded stone fruit trees. The disease is held to be due to the saprophytic fungus, Stereum purpureum, and the experiments indicate that the disease is chiefly air borne, and that it enters the tree mostly where there is an exposed part of the stem, and preventive measures are suggested. Among these are the burning of all affected trees or branches; the avoidance of bruising as far as possible, the use of tar to cut surfaces, or even a weak solution of carbolic acid for the pruning instrument. It may be argued that the methods of inoculation employed in this set of experiments are open to objection. Pieces of infected bark, the size of pins' heads, were taken, and these presumably may, although it is not likely, have contained something, not yet identified, and which might have something to do with the trouble. Our own experience of this disease has induced us to think that unhealthy conditions greatly predispose particular plants to the disease, as we have especially noticed it in soil where fruit trees had been planted on the site of an old wood, and the soil not having been trenched, there was a large number of rotting woody roots in the ground. It may, however, have happened in this instance that there was a deficiency of plant-food, as there was obvious indications of a deficiency of potash and an excess of nitrogen in the natural plants growing around, and chemical analysis showed the same peculiarity.

Fruit growers are urged to co-operate with the authors in investigating this disease, and we hope all of our readers who have the opportunity will help as far as they possibly can.

A boon would be conferred upon fruit growers generally if a short, popularly written pamphlet, containing the essential facts, were available in a very cheap form.

The Week's Work.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq. Cleveley, Allerton, Liverpool.

Chrysanthemums.—As these plants pass out of flower, any variety that is not intended to be grown another year should be at once discarded, retaining only those which are required for purposes of propagation. These latter should be placed in a position near to the glass exposed to the full light and abundant air. The best cuttings are those prepared from firm and short-jointed growths. If therefore the cuttings have already been drawn up weakly, through the plants having been placed thickly together, thin out the weakly growths to a limited number, that those retained may acquire more vigour. Sometimes certain varieties are shy in producing growths for supplying cuttings. Such plants should be encouraged by removing from them some of the surface soil, and by affording them a top dressing of good loam, leaf mould and sand, with an addition of a little dried fowl manure passed through a fine sieve. If these materials be well mixed together, they will form such a top-dressing as will encourage root action and the production of growths for use as cuttings in due time. Such shy varieties will succeed better if placed in an atmospheric temperature of not less than 60 degrees. It is a mistake to cut down the stems very close to the soil; for the roots, being suddenly deprived of the means whereby the moisture is taken from them, very often die, and the loss of a good variety may be the result. If 1 foot or 18 inches of the stem is left, a few shoots will quickly show themselves, and the roots will continue active. Secure from the present time onwards any good medium-strong cuttings of large-flowered varieties that appear. There are many methods of rooting the cuttings. We find here that by placing a propagating box or frame in one of the fruit houses in which the trees are now dormant, every condition is secured that is necessary for the cuttings to root easily, whether they are inserted in pots or not. They can be examined, and ventilation afforded even in the worst weather; whereas the contrary is the case if the cuttings are in exposed pits or frames, which would have to be protected from frosts.

Mignonette.—Plants for flowering in spring should be kept close to the glass, and an abundance of air admitted on all favourable occasions. The plants should not be fed with manures at this season, but after the commencement of the new year, when the roots will again become active, a little feeding will be an advantage. At this season the plants have a tendency to show flower, which should be pinched out, stopping the shoots evenly. The chief condition necessary for success in growing good Mignonette is to encourage the roots to the surface. Water must be supplied with great care, as Mignonette is most impatient of an excess in winter.

General Remarks.—Spray Marguerites occasionally (with quassia or some other disagreeable insecticide), which will help to keep the leaves free from the eggs of the Marguerite fly, and consequently from the mining grub also. Calceolarias, Cinerarias, and Pelargoniums should be given similar attention.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Some ornamental garden hedges.—There is such a wonderful diversity in the plants that can be employed to form ornamental hedges that there exists no excuse for lack of variety in these, whether they serve as boundary fences, shelters, or merely as divisions in the flower garden. First and foremost amongst hedges are those of the Holly and Yew. Their only fault is slowness of growth. They both thrive best in a soil which is rich and inclined to be heavy. Perhaps April is the best time in which to plant the Holly and the Yew, but the present is a good time to prepare the ground by trenching and manuring. When once established the Yew should be clipped in September and the Holly in April. When the Yew is used as a boundary fence it should be remembered that the leaves and berries are poisonous to cattle.

Thuya gigantea (*Lobii*) *and Cupressus macrocarpa* both make fine evergreen hedges; they grow quickly, and are not fastidious in regard to soil and situation.

Beech and Hornbeam.—An admirable hedge is formed by planting Beech and Hornbeam in combination, and the fact that they retain their withered leaves throughout the winter enhances their value as hedge plants, as they thereby afford shelter almost to the same extent as an evergreen.

Roses.—For the formation of flowering hedges Roses are pre-eminently suited. Nothing is more delightful than a hedge of Sweet Briar. It is always a source of pleasure and enjoyment. From the first breaking of the buds in early spring, its scented leaves diffuse the air throughout the summer with a delicious fragrance that hardly wanes until they fall in autumn. The delicate bloom of early summer, too, is followed in the winter months by the fruit, which is a pleasing adornment to the garden. In addition to the hedge of the common Sweet Briar is that formed with the Lady Penzance hybrids; but in planting a hedge of them care must be exercised to select varieties alike in vigour of growth, as some differ considerably. Of other Roses, a bold imposing hedge (if such is desired) could be obtained by planting strong-growing kinds similar to the "Tea Rambler," "Hélène," "Trier," "The Dawson," "Psyche," and "Madame d'Arbley" 3 feet apart in a row, and, after cutting the plants hard back the first year of planting, permitting them to grow afterwards untrammelled with further pruning.

Fuchsias, especially F. Riccartoni and F. gracilis, make beautiful hedges, and are much used in this way in the south and south-west of England. The former is particularly hardy, and

does well without protection even in Scotland. Both of these Fuchsias will root very readily from cuttings inserted in winter.

Escallonia macrantha.—This lovely flowering shrub adapts itself to hedge-making in the south and south-west. Its dark glossy foliage and pretty red flowers are strikingly handsome when the hedge attains to a height of 5 or 6 feet.

Many flowering shrubs, such as Lilac, Philadelphus, Weigela, Spiræa, Leycesteria, Viburnum, Osmanthus, and Olearia, can all be utilised either individually or in combination to produce an effective hedge when it does not necessarily need to be one maintained in a strictly trim and kempt condition.

THE ORCHID HOUSES.

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

Epiphronitis Veitchii is a lovely hybrid from Sophronitis grandiflora, and grows well in pots placed on a shelf near to the roof glass of the intermediate house. The plants are now growing freely, and young shoots are pushing out from the old flower stems. These small pieces, as soon as they begin to push forth roots, may be cut off with a portion of the stem attached, and potted in small pots, using sphagnum-moss, with some small crocks mixed with it. In a short time they will make nice flowering plants.

Epidendrum prismatocarpum.—Plants of this species that are growing freely and require more root room should be repotted at once in pots of large size for their roots to ramble in, and as a medium employ peat and sphagnum-moss properly drained. From this time and until the growths are finished afford plenty of water, but afterwards only just sufficient to keep the roots alive: the pseudo-bulbs will take no harm if they shrivel slightly. Through the winter keep the plants in a light position at the cooler end of the East Indian house.

Angræcum distichum.—In a shady position in the same house this plant and A. pectinatum grow freely, and both are now in bloom. They thrive luxuriantly in well-drained Orchid pans with only sphagnum-moss to root into.

Intermediate house.—The yellow Oncidium cheirophorum, now opening its blooms, is deservedly a favourite among Orchid amateurs. The plant should be elevated well up to the roof of the house; a little sun at this period will do it good. Water should be sparingly afforded at all times, and especially after the flowers fade, or the small pseudo-bulbs and leaves will rapidly decay. Plants of Cochlioda vulcanica, with their elegant spikes of rose-coloured flowers, are charming at this season. It is quite a cool-house species, requiring a light, well-ventilated position and plenty of water at all seasons. The same treatment will suit its congeneric species C. rosea, C. Noetzliana and C. sanguinea.

The Pleiones that have ripened their pseudo-bulbs may now be placed in the intermediate or Cattleya house to flower, and if care be taken that no water is allowed to fall upon the flowers they will keep fresh for a considerable period. Immediately the flowers fade the plants should be repotted into well-drained, shallow pans or pots, and a potting material composed of fibrous loam, peat, and sphagnum-moss in equal parts, mixing moderate quantities of small crocks and coarse silver sand to ensure porosity. After repotting, suspend or otherwise elevate the plants near to the roof glass of the Cattleya or intermediate house, and for a few weeks afterwards little or no water will be necessary. Later, however, water must be applied copiously whenever the surface of the soil is dry, and it may be supplemented with liquid manure to be applied about once a week. The best varieties are Pleione maculata, P. lagenaria, P. Wallichiana, and P. Reichenbachiana. The flowers are easily gathered by giving them a gentle pull, when the stem will readily part from the centre of the young "breaks," and will be much longer than when cut. The cooler varieties as C. humilis and C. Hookeriana have done growing and shed their foliage. Keep them in the Odontoglossum house, and afford them a light sprinkling overhead occasionally just to prevent the pseudo-bulbs from shrivelling. These species usually bloom in January or February.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Pot Strawberries.—Although a little frost would do no harm, it is as well to get the plants plunged in their winter quarters before severe weather sets in. Some cultivators plunge the pots in ashes out in the open, and others stack them on their sides. The latter method is not at all a good practice, for the plants become too dry at the roots and the foliage withers, besides which the plants are liable to be badly injured in severe weather. The best and safest plan is to plunge the plants in fresh leaves, packing them firmly between the pots, in cold frames. If very heavy rains come, lights can be put over them, removing these each day, when it becomes fine. Some of the plumpest and most forward crowns should be selected for the earliest batch. These can be merely stood in a cold frame until the house is got in readiness for their reception. The cooler the plants are kept, the more readily will they afterwards respond to the influences of heat and moisture.

Vines.—After such a favourable season the vines will now be perfectly matured, and abundant ventilation should be employed to cause the plants to go to rest. Late Grapes, if still hanging, should be cut with as much wood as possible, and be placed in bottles in the fruit-room. A few pieces of charcoal put in the water are beneficial. The Grapes will keep in as perfect condition as they would if left upon the vines. When the Grapes have all been cut the work of cleaning the vines can be pushed forward, and any renovation of the borders that may be necessary can be commenced. Where there are interior and exterior borders it is desirable to renew only one border in one season, and by this practice next season's crop will not be injured. In order to keep the roots as near the surface of possible, carefully remove, with a fork, the top soil down to the roots and replace this with some sweet loam, wood-ashes, lime scraps and chemical vine manure. In the following season the front of the external border may be treated in a similar manner. By careful attention to this matter each year, the surface roots will greatly extend, and they will be of much benefit to the crop. Push forward the pruning and cleansing of early and late permanent vines, so that they may obtain a little rest before forcing is commenced. Should the wood show any signs of bleeding, a little styptic may be applied to the cut parts, which will remedy the evil.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Seakale.—The roots may now be lifted, and the best selected for forcing purposes. Only those rows required for growing out of doors need be left longer in the ground, and these will be covered up later on. In trimming the roots, select all the straight thongs for storing away ready for planting in the spring. By lifting the roots thus early, the ground may afterwards be prepared for the next crop, which is an advantage. Keep a succession of plants in the forcing pit, remembering that small and frequent batches are best.

Rhubarb.—Where there are no arrangements for forcing Rhubarb indoors, the roots can be forced where they grow by placing over the crowns some barrels or earthenware pots made for the purpose. Cover these barrels or pots deeply with hot manure, which should be again covered with long litter to prevent the heat escaping quickly. All varieties of Rhubarb are not equally suited for forcing, especially so early in the winter. Some of them refuse to grow at all. Hawk's Champagne is still one of the best, together with The Sutton, both of these varieties are of grand colour and quality, and may be forced easily.

Laying down broccoli.—It is very necessary this season to lay down this crop in order to protect it from severe weather. A few of the late varieties, of which Model and Late Queen are types, need not be dealt with first, for these are capable of withstanding severe weather. The appearance of the plants generally is a good indication of the care required to protect them. They have made unusually succulent growth, and have grown until very late in the season. Lay them down with their heads towards the north, and let the stems be well protected with soil, which is generally the first part of the plant to suffer from exposure. Early Broccoli are doing splendidly, and fine "heads" have been cut, but to have these at their best they must be looked over daily, for they soon spoil.

Early Peas.—Where there is house accommodation for growing this crop, a start may now be made. Sow the seeds in 4-inch pots, five or six seeds being quite sufficient for each pot. The soil should be used in a fairly moist condition, that no watering may be necessary before the seeds germinate. An excess of water just now would be fatal to seeds. Place the pots in an atmospheric temperature of 50°, and as soon as the seedlings are well through the soil, put the pots in a position near to the glass. This crop does equally well whether grown in pots, 8 or 9 inches in diameter, or in boxes, of any convenient length and width. Suitable dwarf-growing varieties are Chelsea Gem and Green Gem. Early Giant is a first-rate variety, growing 3 feet high, and may be sown later. Peas will not stand coddling at any stage of their growth, therefore much heat must not be applied to them. Young Pea plants, when well rooted, may be transplanted readily, and it seems to have the effect of dwarfing the growth, while not interfering with their cropping properties.

THE HARDY FRUIT GARDEN.

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

Cherries should now be planted. Well-drained loamy soil, with plenty of old mortar rubbish or lime incorporated, is the best for these trees. Plant firmly and in dry weather. Cordon-trained trees should be planted 2 feet apart, fan-shape trees 15 to 20 feet, and bush trees and pyramids 9 to 12 feet. Cherries may be pruned and trained at once.

Pruning.—Whenever the weather is mild and favourable for pruning Apple and Pear trees, get as much done as is possible. Bush trees must be looked over carefully in order that they may be thinned regularly and that no part of the bush may remain overcrowded. In those of Apple and Pear that were "summer pruned" there will be no long growths to cut out. Trees or bushes that have grown to the size required, and must be kept so, will need to be pruned back to two or three buds on the new upright or vertical shoots, and the side or middle branches should be treated similarly, cutting to a bud which points outwards. Where several shoots have arisen from one shoot, they should be thinned out severely. Such trees need to be root-pruned occasionally to restore the balance between root and branches. Try to obtain a regular crop over the tree rather than a dozen Apples or Pears in a cluster, for under these latter conditions the fruits will not be of good size or colour. On old trees that have clusters of shoots or spurs, which have grown long and infertile, take off one lot entirely and thin out every other spur. This will help in a year or two to rejuvenate the tree. Especially will this be the case if the roots have been given the attention recommended for them in former articles. The pruned spurs will break thickly at the base in the spring, and they must be thinned out to about three shoots as soon as it can be seen which are the strongest.

Trees growing against walls will require similar treatment. When the pruning has been done and the trees cleansed, they may be either nailed or tied. All old ties should be removed, as there may be insects lurking in them. Following the work of training the trees, a thin layer of the border may with advantage be taken away, in case any grubs of caterpillars are hibernating in it. Afterwards a slight dressing of lime and basic slag may be afforded, and over this a dressing of new soil, or failing this a layer of ashes. Ashes form an agreeable substance for walking on. The border within the root area should not be dug with a spade, especially after root-pruning has been done. If any insects can be detected, cleanse the trees thoroughly, and as a stimulant to the bark and as a general cleanser, spray them with the XL-All winter wash. This will be found to destroy all moss, lichen, eggs, &c., of insects which may have been deposited in the crevices of the bark or wall. If this be used at, say, 3 lbs. to 35 gallons of water, it will be found very efficacious. This wash, unlike most others, is non-poisonous. In cases of bad attack of American blight, see that every portion is washed from the branches. In bad cases this work should be done again in the new year.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Nov. 24—Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—41·4°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, November* 21 (6 P.M.): Max. 57°; Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, November* 22 (10 A.M.): Bar., 30·3°; Temp., 59°; *Weather*—Bright.

PROVINCES.—*Wednesday, November* 21 (6 P.M.): Max. 57° S.W. Ireland; Min. 44° Scotland, east coast.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Roses, Plants, Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY to FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY—
Choice duplicate and other Orchids from the Park Lodge Collection, at Park Lodge, Ilkham, by Protheroe & Morris, at 12.30.

WEDNESDAY—
Cases of Japanese Lilies, received direct at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.
Azaleas, Palms and plants, Roses, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

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

Horticultural Affairs.

The meeting of the Royal Horticultural Society on Tuesday last was indeed a memorable one, and it was particularly gratifying to those who have in the past, in season and out of season, advocated both the erection of a central hall for the use of horticulturists, and the establishment of a research station in the garden of the Society. The utility of the hall was amply demonstrated not only by the fortnightly exhibition, of which notice is given in another column, but by a succession of meetings which occupied the Fellows, or some of them, continuously from morning till evening, and which dealt with matters of great importance not only to Fellows of the Society, but to horticulture generally. It was, indeed, satisfactory to see our oft-expressed desire for the establishment of a suitable horticultural institute so well fulfilled. Whilst many co-operated to bring about these results, we are not likely to forget that it is to Baron Sir Henry Schroeder, in particular, that we owe the existence of the hall, whilst for the garden at Wisley we are under corresponding obligations to Sir Thomas Hanbury.

Reverting to Tuesday's proceedings, there were, first of all, the ordinary meetings of the council and of the several committees, Floral, Fruit, Orchid and Scientific, to which we need not in this place make further allusion. There were, in addition, other meetings to which attention may be directed—taking them, as it were, in chronological order.

Researches at Wisley—The Currant-bud mite.

At the three o'clock general meeting of Fellows, Mr. Massee made the welcome announcement that the building of a research laboratory at Wisley had been commenced, and that real progress had already been made in those scientific and technical investigations we have so long yearned for, as promising, in the future, results of greater importance to gardening than the mere holding of exhibitions and distribution of awards, valuable as those proceedings undoubtedly are.

Mr. Massee, in his incisive manner, detailed the results of the experiments and observations made up to this time at Wisley, premising that owing to the absence at present of a laboratory, the subjects selected for investigation were such that most of the work could be conducted in the field. The disease of Black Currants known as "big-bud," &c., was first selected. A series of experiments proved that the mite causing the mischief never voluntarily left the bush on which it was parasitic, and, further, that the only period of time it was exposed on the bush was the time occupied in walking from the old-infested bud to a fresh one on the same branch. These discoveries explained why attempts to eradicate this pest have, up to the present, proved abortive. The infected buds were not removed before some of the mites had migrated to new buds; and as the mite never feeds outside a bud, spraying with an insectide proved comparatively useless, only killing those mites that happened to be in the act of migrating, even if it did that. The mites do not fly, but are said to be conveyed by birds; this, however, could not be actually demonstrated, but it was definitely proved that the mites were conveyed by insects, as many as seven mites having been found on the body of a ladybird. They have also been found on aphides. In view of the above habits of the mite, it appeared obvious that a certain method of preventing migration from old to new buds would consist in covering the branch with some sticky substance not easily removed by rain. Friends were asked to carry out this idea, the choice of the material being left to themselves. At Wisley, where a supply of badly diseased Black Currant bushes was available, some had the diseased buds coated with vaseline; in other experiments the branches were smeared with cart-grease. In both experiments, extending over two years, not a single diseased bud has been discovered since the experiments were conducted. In one instance, a batch of bushes were brushed over with thinned gas tar, this also completely checked the disease. On a large scale, a compound of fish oil and resin, coarse palm oil, or cart-grease would prove efficient, and as the diseased buds are covered by the sticky compound, the mites cannot escape, hence the danger of being conveyed to other bushes by outside agents is obviated. Bushes should be treated in January, and, if necessary, again in April. If the work is thoroughly done, the pest will be eradicated. The bushes experimented upon at Wisley still remain, and can be examined by anyone interested.

A "big-bud" caused by a mite is also very common on the Hazel, and the popular opinion is that the mite from the Black Currant can attack the Hazel and vice versâ. A series of experiments proved this idea to be unfounded. Certain other investigations that were completed were also briefly described. Finally, an appeal for the preparation of a "Wild Fauna and Flora of the Gardens" was made.

To have detected a means of combating this terrible enemy of the Black Currant is a result of no mean importance. Mr. Massee and the Society may be warmly congratulated on the success of the experiment, which will, we hope, be repeated and confirmed by other observers. In the meantime, we may point out that this highly important practical result has been obtained by a careful study of the life history and ways of life of the creature which inflicts so much damage on our plantations, and not by any mere rule of thumb proceedings, such as have been so often tried and found wanting.

Prevention of Corruption Act.

Whilst Mr. Massee was discoursing on a subject of so much practical importance, and whilst the Scientific Committee was in session subsequently for an hour, another meeting was in progress throughout the whole time, which affects nurserymen and gardeners very nearly. Rarely, if ever, have we seen so large and representative an assemblage of nurserymen before. The object of their gathering, presided over by Mr. T. A. H. Rivers, was to consider the course of action to be taken in consequence of the passing of the Prevention of Corruption Bill, which will come into operation on January 1. We have already published the text of the Bill (Oct. 20, p. 279), and we have inserted various letters from correspondents viewing the matter from different standpoints. Many more letters have reached us which it will now not be necessary to print, at least in their entirety, but we should like to remove one misapprehension, under which some of our correspondents appear to suffer, and to point out to them that the provisions of the Bill do not affect gardeners and nurserymen only, but apply to all trades and employments. The provisions of the Bill are very stringent, but as they only apply to practices which can be proved to be "secret and corrupt," we do not see that the man who has a clear conscience need trouble himself much about the matter. The Horticultural Trades Association, under whose auspices the meeting was held, had secured the opinion of a counsel learned in the law, who answered the questions put to him in a very definite manner, pointing out that the slightest infringement of the law might lead to distressing results. Some of the instances cited were, intrinsically, so trivial that we imagine the legal maxim "de minimis non curat lex" would, in practice, be found to apply. Still, behind all are the great principles of right and wrong which we must all act on as best we can. The matter was debated at great length, and ultimately the Press was furnished by the Honorary Secretary with the following authoritative statement:—

"Under the auspices of the Horticultural Trades Association of Great Britain and Ireland, a largely attended meeting, at which some seventy of the principal firms in the horticultural trades were represented, was held in one of the committee rooms of the R.H.S. Hall in Vincent Square to consider the position created by the Prevention of Corruption Act, which is to come into operation

on January 1 of next year. After full discussion of the situation and a carefully prepared and exhaustive statement of the legal aspects of the question had been laid before the meeting, supported by the opinion of an eminent King's Counsel, from which it appeared that the Act in question would include the horticultural trades, it was decided to loyally accept the position as defined by the Act, and to avoid anything which might in any way appear to transgress its provisions."

British Gardeners' Association.

This meeting of the trade affords a good illustration of the advantages of co-operation and combination. We trust the illustration will not be lost on the British Gardeners' Association, whose Council held an ordinary meeting on the same day in the same building. The nurserymen have the means of helping themselves in a much more efficient manner than have the gardeners. We heartily trust that the Association of which we are now speaking will do for the whole body of gardeners what the trade association is doing for its members. They stand in need of co-operation and mutual assistance much more than the nurserymen. Hitherto they have been isolated and with no power of common action. Now they have a chance of raising their professional status and furthering their individual interests in a way they never had before. In their turn, employers will have the benefit of some guarantee of the fitness of the gardener which they have never previously had, and they will soon see the necessity for increasing the remuneration of their gardeners, now often much underpaid in proportion to the qualifications and responsibilities imposed upon them. In too many cases the remuneration to a trained gardener is less than that accorded to other employees from whom much less is expected.

The Benevolent Institution.

Even this does not exhaust the list of meetings held on Tuesday at the Royal Horticultural Hall. In addition to those mentioned, the claims of the necessitous gardeners were considered at a meeting of the committee of the "Gardeners' Benevolent." Truly, the gardener loomed large on Tuesday last!

Country Life in Normandy, &c.

In the evening a fit sequel to the day's proceedings was found in the dinner of the Horticultural Club, when Mr. T. W. Sanders gave an interesting address on some of the conditions of country life in Normandy, Holland, and Sweden. Mr. Sanders visited Normandy three years ago with members of the British Dairy Farmers' Association, and he described in appreciative terms the generally good cultivation observed in the Normandy orchards, and the "luscious" cider obtainable there. Mistletoe was growing in every orchard, and the common Laburnum vulgare was so exceedingly common that at first it was thought to be flowering Gorse. The details observed in the great creameries, where the process of butter-making was in progress, and the insanitary conditions under which the celebrated Camembert cheese is manufactured were not such as to increase an Englishman's appreciation for the finished products. In Normandy, however, there are excellent examples of the benefits arising from co-operation, and although Mr. R. P. Kerr, Mr. Collingridge, and other subsequent speakers were not disposed to consider good cultivation a general characteristic of the orchards there, they admitted many useful lessons could be learned by English visitors to that country.

Mr. Bunyard related a few facts respecting Messrs. Bulmer's cider industry at Hereford, from which it appeared that this firm is importing this season four thousand tons of Apples from Normandy for the manufacture of cider.

Mr. Sanders had a different story to tell relative to Holland, where cleanliness and sanitation appear to be almost worshipped by all. He spoke of the wonderful amount of produce obtained from the land owing to the intensive cultivation practised by the Dutch, and of the large amount of cheese, butter, bacon, and mutton, in addition to much market-garden produce, that is annually exported from Holland to this country.

During the present season the British Dairy Farmers' Association visited Sweden as guests of the Swedish Government. The party travelled 3,000 miles through that country, and at Stockholm they were so far north that it was possible to see to read the newspaper all through the night. Very few home gardens were observed throughout Sweden, these few being in the district of Gothenberg. Fruit-cultivation is not practised extensively, but it is becoming more general, and English varieties of Apples are found to succeed best. Potato cultivation is being increased enormously, and the bulk of the tubers will be used for making Potato spirit for use in Swedish punch. Two of the highest nobility in Sweden are Scotsmen, Count Douglas and Count Hamilton, and the visitors noticed that in Sweden "Ayrshire cows and Scotsmen were doing well." Much stress was laid upon the encouragement given by the Swedish Government to farmers wishing to purchase land, and to the development of agricultural industries generally, and the thorough system adopted in the Government trial grounds for the improvement of Wheat is certainly worth emulating.

The trend of the evening's discussion was upon the value of co-operation amongst producers and the need for more sympathetic assistance from the Government. Mr. C. E. Shea, who presided, offered the congratulations of those present to Mr. Sanders on the honour recently conferred on him by the King of Sweden.

OUR SUPPLEMENTARY ILLUSTRATION.—Thunbergia mysorensis is a stove climber better known under the name of Hexacentris. It has long, slender branches, bearing opposite oblong lanceolate remotely and slightly toothed glabrous leaves. The flowers are in pendulous racemes irregular in shape, with an upper and a lower lip, yellow with a deep red border. It is an old plant in gardens, but still not so often met with as might be expected from its attractive appearance. It may be either planted in the border in the stove, or be grown in a large pot. The latter system of culture is preferable, as being a free-rooting subject, the soil in which it is grown can be more easily renewed in a pot. Plants can be had in bloom at almost any season during the year, but they flower best in the winter and early spring months on well-ripened growths produced in the preceding year. A plant will also flower on the current season's growth, without any previous rest, during the late summer and autumn, but to effect this it must be grown in a structure in which a maximum amount of light is obtained, and under drier conditions than are usually afforded stove plants. The plant should be subjected to drier conditions, both at the roots and in the atmosphere in which it is growing, when ripening its wood. Young growths of the current year will readily form roots in the spring if inserted singly in small pots in a compost of two-thirds sandy loam, and one-third sand. They should be taken with a portion of the older wood at the base, and be kept at a temperature of 70° Fahr. in a propagating frame. By the beginning or the middle of May they will be ready for lifting into 6-inch pots. When the plants have attained a foot in height, the tops should be pinched to induce a growth of several strong shoots: each of which should be trained around sticks placed for the purpose. A temperature of 60° at night-time and 20° higher during the day will suit the requirements of the plants. They should be syringed overhead once a day, and should not be allowed to become scorched by the sun's rays. By the middle of July they should receive a further shift into 9-inch pots. They should be gradually hardened for the winter, and the syringing discontinued at the beginning of September. A winter temperature of 50° to 55° will be found sufficient, and very little water must be given. About the middle or end of February shift them into 16 to 18-inch pots, or plant them in the border, and endeavour to procure strong, robust growths for the following season's flowering, and when the flowering spikes appear, stimulate the plant with a little liquid manure, which should be applied twice a week. Do not syringe the plants when they are in their flowering stage.

LEGACY TO THE ROYAL GARDENERS' BENEVOLENT INSTITUTION.—In the will of MRS. SAM LEWIS-HILL, which has just been made public, the Gardeners' Royal Benevolent Institution has been left a legacy of £1,000.

LEGACIES TO GARDENERS.—MRS. SAM LEWIS-HILL'S will also directs that certain furniture and the cup and prizes won by him whilst in her service, and also a sum of £2,000, be given to her gardener, Hammond. MRS. LEWIS-HILL also left £5 to each of the gardeners employed in Grosvenor Square Gardens. By the will of MISS MARY ISABELLA CARVER, which was proved on Tuesday last, it was directed that a legacy of £1,000 should be given to "her faithful gardener," and she also left an annuity of £30 to her late gardener. We have often thought that the claims of gardeners upon the consideration of their employers were not always sufficiently realised, therefore these instances to the contrary are the more gratifying.

SWEDISH HONOUR TO MR. T. W. SANDERS.—In connection with a visit paid to Sweden during the present season by representatives of British Agriculture and Dairy Farming, MR. T. W. SANDERS, F.L.S., founder of the National Amateur Gardeners' Association, has been appointed by the King of Sweden a Knight of the first class of the Royal Order of Wasa. MR. SANDERS organised the party and acted as its Chairman whilst in Sweden. We congratulate our colleague on the high honour conferred upon him.

CATTLEYA LEDA.—The plant recorded in the *Gardeners' Chronicle*, November 10, Supp., p. iv., was entered before Committee in error, as the name had been used before for a cross between C. Percivaliana and C. aurea. The correct name is Cattleya Cleopatra (superba × aurea).

MORMODES BUCCINATOR THEIOCHLORUM.—This is the variety recorded on p. iv., Supp., in *Gardeners' Chronicle*, November 10, without the varietal name. It entailed research to correct the error in the entry of the name.

ROSES FOR THE IRISH INTERNATIONAL EXHIBITION.—The promised gift of 10,000 plants of Rosa Hermosa by Sir JAMES BLYTH for planting in the grounds of the Irish International Exhibition should do much to popularise this pretty, free-flowering, pink coloured Rose. Unfortunately the limited run of the exhibition (May to October, 1907), with the comparatively late planting, contingent on the present transition state of the ground, which must ensue, is not exactly favourable to the plants. With regard to the former, however, the donor has generously promised to do all that is possible in the way of sending vigorous plants, whilst the horticultural department of the exhibition will, doubtless, do its part in order to overcome the evil of late planting which, under the circumstances, must more or less obtain.

BULLETIN DE LA SOCIETE FRANCAISE D'HORTICULTURE DE LONDRES.—The recently issued part of this journal contains an excellent portrait of PETER BARR and a sympathetic account of his career from the pen of Mr. SCHNEIDER. The proceedings of the society make very interesting reading, and the criticisms on our method of arranging flower shows are well founded in themselves, but do not sufficiently take into account the circumstances that prevent a more artistic and beautiful system of grouping. The main object is to show well-grown and interesting plants. Quite as good a general effect could be produced by commoner materials if time and space permitted.

THE WHITE CURRANT.—Mr. H. MAURER, of Jena, sends us a beautiful photo-lithograph of a long-clustered white Currant which has hitherto, he says, been erroneously known in England as the "cut-leaved white." The variety possesses two great advantages, the one being the extraordinary strength of its growth, the second the very unusual length of the bunches of fruit. These peculiarities have remained unchanged during eight years of culture in rich and somewhat damp soil.

THE OLDEST CAMELLIA TREE IN EUROPE is to be found at Caserta in the park belonging to the King of Italy. The tree, it is said, was planted in 1760, and was the first example of the Camellia which produced seeds in Europe.

FRUIT CROPS AND BIRDS.—Mr. CECIL HOOPER puts the following questions and will be glad to receive replies to any or all of them: 1, Have you seen any wild bird eating slugs? 2, Or any bird other than the song thrush eating snails? 3, What birds besides the house sparrow do you consider should be decreased in number? 4, Have you observed any of the following pests eaten by birds, and by which bird: looper caterpillar of winter moth, lackey moth, ermine moth, bud moth caterpillars? 5, Larvæ of sawfly? magpie moth on Gooseberries and Red Currant? 6, Scale on Apple, Gooseberry or Currant? 7, Aphis on Red or Black Currant, Plum, Damson, Cherry, Apple; 8, woolly aphis and Apple sucker? Remarks as to their food; birds and insects injurious to buds, fruits, etc.:—Birds. 1, house sparrow; 2, bullfinch; 3, blackbird; 4, missel thrush; 5, song thrush; 6, chaffinch; 7, greenfinch; 8, rook; 9, jay; 10, wood pigeon; 11, blue tit; 12, black cap; 13, nettle creeper and other warblers; 14, robin; 15, wren; 16, cuckoo; 17, pied wagtail: other birds injuring fruit or beneficial to the grower. Mr. HOOPER'S address is Shoreham, Kent.

A NORTH STAFFORDSHIRE APPLE.—Mr. WALLIS, late of Keele Gardens, Staffordshire, has sent us some fruits of an Apple named Beebench, which he included in his list of the best six dessert Apples for his locality, when contributing to our census taken in 1904. It is evidently a local variety, cultivated at Woore, where Mr. WALLIS now resides, and in neighbouring parishes, where it is valued for its free cropping qualities and pleasantly flavoured fruits. The fruits are from small to average size, somewhat conical in shape, and the skin green to yellow, excepting some patches just around the stalk and a very few minute dots over the entire fruit. The stalk is only one quarter of an inch long, very slender, and it is inserted in a very perfectly formed funnel-shaped cavity from which the stalk scarcely emerges. The eye is small, with closed segments and set in a very slight depression, the sides of which are very inconspicuously furrowed. The flesh is white, soft, juicy and refreshing, but possesses comparatively little flavour. The sample is not equal to our best dessert Apples in the southern counties, but if Beebench were grown in Kent, Sussex, Surrey, or Berkshire, its fruits would probably be much improved, for north Staffordshire is not a good Apple district, and the experiment might therefore be worth the trial. The fruits are at their best in the middle of the month of October.

VIOLET LA FRANCE.—We have received some unusually fine flowers of this variety from Mr. W. HONESS, Cobham Park Gardens, Surrey, who states that it has succeeded so well in those gardens for several years past that the variety Princess of Wales has been discarded in its favour. The habit of La France, writes Mr. HONESS, is very compact and free-flowering, the flowers, which are borne on a self-supporting stem, are quite as large in size and deeper in colour (purple) than those of Princess of Wales. When growing side by side with Princess of Wales, La France has shown itself to possess a more hardy constitution.

THE ACTION OF PLANTS ON A PHOTOGRAPHIC PLATE IN THE DARK.—In a communication to the Royal Society, and subsequently to this journal (Nov. 26, 1904, p. 370, figs. 165 & 166), Dr. RUSSELL showed that wood has the property of acting in the dark on a photographic plate placed in proximity to it. In a further communication to the Royal Society, Dr. RUSSELL shows that leaves, seeds, roots, bulbs, and, with a few exceptions, all vegetable substances, act in a similar way. The plants, as it were, store up sunshine, whose presence is revealed by the photographic plate. But starch, cellulose, gum, sugar, pith, and pollen (mostly plant-products rather than parts of the plant) are without this property. It appears that seeds in their dormant state are devoid of all power of acting on a photographic plate, but as soon as growth commences this power appears. Flowers and their parts, always excepting the pollen, no matter what their colour, have this property.

Publications Received.—The first volume of the *Trees of Great Britain and Ireland*, by H. J. Elwes, F.R.S., and Augustine Henry (privately printed), has been issued and will demand full notice at an early date.—*First Steps in Gardening*, and *Pictorial Practical Potato-Growing*, both by Walter Wright and E. J. Castle (Cassell & Co.).—*Landschaftliche Gartengestaltung*, by Camillo Karl Schneider (Carl Scholze, Leipsic).

HOME CORRESPONDENCE.

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

THE BRITISH GARDENERS' ASSOCIATION.—It is a relief to what may be termed the progressive section—a very small one, I fear—of the B.G.A. to find that its highly-respected chairman of council, Mr. Divers, is dead against any mixing of amateur with professional gardeners. What a simple, long-suffering, good-natured fellow the average gardener is. Not content with a working day of anything between 10 and 16 hours, with a Sunday now and then thrown in, he must needs spend a portion of his winter evenings in improving himself, not at billiards or bridge, but as a gardener. And he is so unselfish as to invite the tinker and tailor and candlestick maker to come and learn also. There is no harm in their coming, except when they make unreasonable claims and pretensions, and even then the good-natured gardener often puts up with it. When our B.G.A. is strong enough it will easily clear its temple of all these undesirables. I have more than once been troubled by these tinkers, &c., when addressing a meeting of what I thought were all professional gardeners. If these gardeners' societies would only set themselves to seriously consider the question that at present most concerns them, they would find it more profitable than discussions on how to grow Grapes and Cabbages, and they would then no longer be troubled by the tinkers, &c. The question for them is the British Gardeners' Association, which was started for the purpose of organising professional gardeners, for what? In the "plea" put forward by some of the present council of the B.G.A., namely, Messrs. Divers, Pearson, Curtis, Weathers, and a few others, including myself, it was stated that the association would register gardeners, regulate their wages and working hours, control journeymen and apprentices, protect their interests—in short, look after them generally. These are questions for professional gardeners only, to be dealt with only by combination and co-operation. "Mutual protection and assistance" was our aim, and much work was done and progress made "on that ticket." There was opposition, of course; there always is when movements of this kind are set going. The short-sighted and selfish among gardeners, the sweater and narrow-sighted among employers, protested, the one saying that they would do as they liked, the other that gardeners got as much as they were worth. Some raised the cry of "horrid trade unionism," of the principles of which it was evident they knew nothing. Still, the association grew, the commotion it caused proving a help rather than a hindrance. Its promoters ran some risk, as those who endeavour to right a wrong generally do, notwithstanding that the cause was a just one, the remedies proposed honest and lawful, and everything was above board. If it were possible to unite professional gardeners into a trade union, no effort should be spared to accomplish this. There are, however, difficulties in the way. At the same time, there is not the smallest chance of this or any other gardeners' association doing anything that will "promote the interests of the profession and all who belong to it," unless it is organised on lines approximating as nearly as possible to those of the trade union. A year or two ago one dared not even hint this; now, however, the workmen's combinations are encouraged and admired, even by the lawyers and the prophets. For this reason some of us are disappointed to find that the B.G.A. has dropped into the somewhat undignified position of an employment registry office, and apparently nothing else. This is nothing less than a perversion of the objects for which the movement was started, and, as one who took an active part in its inauguration, I protest against it. Surely it would be better if the effort were to improve the conditions of the gardener in his present situation than to encourage him to believe that they would be better in his next place. We are greatly in need of an organisation that will do for gardeners what other combinations of workers have done, and continue to do, for themselves. The man who is not of our profession, however worthy he may otherwise be, must look elsewhere for help. Gardening can be made a profession or trade only by the gardeners themselves, and no one can deny that a start was made that would have led up to this had there been no departure from the lines laid down in our "Prospectus." We need this organisation to promote and protect the interests of professional gardeners; to be even aggressive on their behalf when necessary; to show by its attitude and operations that in the movement now going on everywhere for the betterment of the conditions of the worker the men who have adopted professional gardening as a calling shall not be left behind. *W. Watson.*

RE-NAMING OF CARNATIONS.—In my letter (p. 328) I said if rose-pink Enchantress is no better than Mrs. Omwake it should not be called rose-pink Enchantress, as Mrs. Omwake is slightly pencilled, and not a clear pink. I am glad to hear that the rose-pink Enchantress is so perfect, and there was evidently no occasion for *New Yorker* to

hint in his first letter that the exhibitor of Mrs. Omwake had re-named the rose-pink Enchantress, for, with his own words, this is "the finest rose-pink Carnation existing as yet." I only classed Mrs. Omwake and Helen M. Gould together as both being sports of Enchantress, which no doubt they are. Possibly Helen M. Gould may not look quite so much of a winner when we see it in England. For if *New Yorker* is a New Yorker [He has returned to America.—ED.] he is, no doubt, aware that New York is further South than Naples, and that consequently there is considerably more bright sunshine round New York at this time of the year than anywhere in England, and for that reason I am afraid we shall never be able to grow Carnations so well during the winter as the Americans do. It may be foolish of English growers to buy from stocks they know nothing about, but I am afraid there are very few able to examine the stocks before buying novelties. As regards my stock of Enchantress, I do not think I will change it, as *New Yorker* suggests, for even if among 15,000 I get 12 sports, most of them only parts of a plant, it is quite good enough for me. Whether I can fix these sports or not, I do not know, for I have not troubled to try. *C. Engelmann, Saffron Walden.*

FLOWERS IN SEASON.—I send samples of early-flowering Chrysanthemums from the open border, also flowers of Salvia azurea grandiflora from outdoors. The weather has been favourable and dry. We had 38° of frost on October 14, which slightly damaged the Dahlias and Salvia splendens. At the present time Hollyhocks are at their best from seed sown in a cold frame in December, 1905. Schizostylis coccinea is in full beauty. A large plant of Datura sanguinea, in a sheltered corner, is most effective with its large pendulous orange-coloured trumpets. A large plant of Genista racemosa, which has stood two winters in the open, is now in full flower. Salvia azurea grandiflora is a great success here as a late autumn flower, standing rain well. Pentstemon Newbury Gem is still beautiful in the beds, as is also Nicotiana sylvestris and Calceolaria amplexicaulis. Cobœa scandens on rough Larch poles is fresh and vigorous. Last year a plant of this, which covered a portion of an old Pear tree on a south wall, bore numerous seed pods which ripened seed in February, after remaining on the plant the whole winter. *F. Strat, Andwell, Wigtonshire, November 14.* [The flowers included a large number of Chrysanthemums, ranging from white to yellow in various shades, and from lilac to ruddy brown. Among the latter Mr. W. Holmes was the most remarkable, and Soleil d'Octobre among the yellows. But the number and variety of kinds were too great to allow us to do more than say that the consignment was a very noteworthy one. The blue of the Salvia is very valuable at this season.—ED.]

CHRYSANTHEMUM BLOOMS AT EXHIBITIONS (see p. 342).—Mr. Molyneux now contemns the very means by which he attained fame. How many have in the past decried the craze for big show blooms and so far with little effect! When the Swanmore giant commences to deal these blooms fierce blows of condemnation, then must the end of the craze be at hand. There are many readers of the *Gardeners' Chronicle* who welcome this useful and desirable crusade. *A. D.*

CULTURE OF CELERIAC.—The Celeriac, referred to by the Editor on p. 341, was the produce of seeds sown in a gentle heat early in February last. As soon as the seedlings were large enough to handle they were pricked off into boxes, and these boxes were placed near to the glass, it being most important that the plants should be prevented from becoming drawn, a condition which would be fatal to success. As growth advanced, the plants were gradually hardened off previous to being pricked out into a cold frame. Subsequently they were planted at 18 inches apart, in shallow drills, drawn at the same distance apart on a south border. From that time the outer leaves were kept pulled off at intervals of about three weeks, and this was continued all through the growing season. The plants were frequently flooded with water, and these waterings were alternated with copious supplies of liquid manure obtained from the stables. *W. Honess, Cobham Park Gardens, Cobham.*

ARAUJIA SERICIFERA (PHYSIANTHUS ALBENS).—I am of opinion this plant is hardier than it is generally considered to be. A plant exposed on the balcony at Norton Barracks, Worcester, all through last winter was uninjured. A small specimen planted out of doors in these gardens last spring grew to a height of 12 feet, although it failed to flower. In these gardens is also a fine batch of plants raised from seeds sown last May, some of the best being now 4 feet in height. Perhaps some reader who is acquainted with this fine plant will briefly state its cultural requirements. It scarcely seems a wall plant, but has more the habit of the Hop (it entwines itself in the reverse direction to the Hop), and I would suggest its being trained to a pole, or old tree, such as one would afford Polygonum Baldschuanicum. *Louis C. Williams, Old Colwall Gardens, Malvern.*

WILLOWS (see pp. 327 and 337).—I believe it is Salix alba that is most in demand, and is of the greatest value for making into cricket bats. As a rule, planters when increasing their stock do not rely so much on small cuttings, but adopt quite the contrary practice. Large, clean growths, fully 18 to 20 feet in height, and from 10 to 12 inches in circumference, taken from pollarded trees, are what they usually plant. They first drive a stake into the ground 2 to 3 feet deep, the stake is afterwards levered out and the butt end of the willows dropped into the holes and made tight. These pieces should be made secure against winds, which would otherwise cause them to sway about, and if the weather proves dry, as was the case last summer, a few good soakings of water should be applied at intervals and, if necessary, the soil should again be made firm round the stems. It may be interesting to those intending to plant if it is stated that these huge, clean sets may be bought and planted for the small sum of about 1s. per set, the price varying a little, according to the quantity required. Certain firms undertake to do this kind of work. *H. Markham, Wretham Park, Bamt.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 20. The usual fortnightly meeting of the Committees was held on Tuesday last in the Vincent Square Hall, Westminster, and there were several other events also during the course of the day that together kept everyone busy. See p. 356.

The FLORAL COMMITTEE recommended seven Awards of Merit to varieties of Chrysanthemums. The ORCHID COMMITTEE's awards to new plants included two First-Class Certificates and two Awards of Merit.

The FRUIT AND VEGETABLE COMMITTEE did not make an award to a novelty on this occasion.

In the afternoon Mr. Geo. Massee gave a lecture on "Researches at Wisley." See p. 356.

Floral Committee.

Present: W. Marshall, Esq., Chairman, and Messrs. Geo. Nicholson, T. W. Turner, Jno. Green, C. R. Fielder, G. Reuthe, Jas. Hudson, R. Hooper Pearson, W. Howe, R. W. Wallace, Chas. Jeffries, C. E. Pearson, C. Dixon, J. T. Bennett-Poe, Jas. Douglas, W. Cuthbertson, H. J. Jones, W. P. Thomson, E. H. Jenkins, W. J. James, C. E. Shea, R. Wilson Ker, R. C. Notcutt, Jas. Walker, C. J. Salter, C. T. Druery, Chas. Blick, H. J. Cutbush, and J. Jennings.

Mrs. STEWART MACKENZIE, Seaforth, Lydhurst, Hayward's Heath (gr. Mr. A. Smith), displayed a number of plants of Begonia Gloire de Lorraine and the white Turnford Hall variety. All the plants were perfect specimens, each being crowded with flowers, and exhibiting excellent culture, including three very large baskets of the pink variety that were suspended from iron standards. (Silver Gilt Banksian Medal.)

Another very handsome batch of these Begonias was shown by the Hon. WALTER ROTHSCHILD, Tring Park, Tring (gr. Mr. Dyer). The group, which occupied a considerable space, was composed of both the white and the pink varieties, the latter forming a broad band around a batch of the white-flowered variety. They were all well-grown specimens. (Silver Flora Medal.)

F. M. HAMPDEN TURNER, Esq., Rooksnest, Godstone (gr. Mr. Wm. Penton), showed nine pyramidal trained plants of Begonia Gloire de Lorraine, and a number of Zonal Pelargoniums, with cerise and pink-coloured flowers.

Messrs. H. CANNELL & SONS, Swanley, Kent, displayed vases of Zonal Pelargoniums of new and choice varieties. We noticed several of recent introduction—Bowood (a pleasing shade of crimson), Lady Folkestone (blush pink), Madresfield (rich purple), Helen Countess of Radnor (cerise), Kingswood (scarlet, with a white "eye"), Warley (a mottled variety, shades of orange and white), &c. Messrs. CANNELL also displayed Chrysanthemum blooms, among which were many pretty single varieties. Innovation is a "single" of the best form, the florets being a shade of red. (Silver Flora Medal.)

E. H. BROWN, Esq., Roehampton, Surrey (gr. Mr. Bradford), exhibited a pleasing group of indoor flowering and foliage plants arranged in the form of a semi-circle. (Silver Flora Medal.)

Mr. H. B. MAY, Dysons Lane Nurseries, Upper Edmonton, staged Veronicas, Begonias, and Bouvardias, also nicely berried plants of Solanum capsicastrum, the whole being interspersed with small, hardy Ferns. (Silver Banksian Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, exhibited a number of greenhouse plants, a batch of Acacias in about twenty-five varieties, and some very fine Carnations in vases. A plant of Bilbergia muscosa was shown in flower, and there were several specimens of Grevillea Preissi also in flower.

Messrs. CRAGG, HARRISON, CRAGG & Co., Merrivale Nurseries, Heston, Middlesex, filled a large table with single Chrysanthemums, many of which were of their own raising. We noticed Lady Brooks (a good crimson flower), Sylvia (bronze), G. W. Forbes (a large red flower with a paler reverse), Miss Irene Cragg (white), &c. (Silver Flora Medal.)

Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. Ed. Beckett), showed a very pleasing exhibit of decorative and single Chrysanthemums, among which we noticed many old favourites Ladysmith, Mary Anderson, Stella (white), Golden Star (deep yellow), &c. Thirza Cherry is a variety with narrow-fluted or quilled florets. (Silver Banksian Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, showed some of the latest varieties among the various types of Chrysanthemums—Japanese, decorative, single, &c. The variety Annie Hamilton is a large white Japanese flower with narrow and recurving florets.

Mr. NORMAN DAVIS, Framfield, Sussex, exhibited some large specimen blooms of Japanese Chrysanthemums of such choice kinds as Mad. Paolo Radaelli, Miss Hinckling, Marquis V. Venosta, Algernon Davis, Mad. R. Oberthur, &c., all in the best exhibition style. Several vases of single varieties found a place in the display.

Mr. D. FAIRWEATHER, Bifrons, Canterbury, Kent, showed several vases of single Chrysanthemums and three new Japanese varieties.

E. SALMON, Esq., Norbury Park, Dorking (gr. Mr. Geo. Kent), also displayed a collection of pretty single Chrysanthemums.

Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, showed a group of plants of the white market Chrysanthemum Money-Maker.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., exhibited a very large group of ornamental shrubs and Conifers—Box, Rhododendron, Privet, Euonymus, Hollies, Laurustinus, Cytisus, Andromeda japonica and other similar plants in great variety and excellent condition. (Silver-Gilt Flora Medal.)

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed small shrubs and trees in pots—Ivies, Aucubas, Eleagnus, Euonymus, Osmanthus, &c.

Messrs. BARR & SONS, King Street, Covent Garden, W.C.; Mr. G. REUTHE, Keston, Kent; and Messrs. JOHN PEED & SON, West Norwood, displayed hardy and rock-garden plants.

J. F. HOOPER, Esq., Snowdenham Hall, Guildford (gr. Mr. A. J. Ivy), showed a batch of Cyclamen plants, the first seen in the hall this season. (Bronze Flora Medal.)

Messrs. JAMES VEITCH & SONS, Ltd., King's Road, Chelsea, showed a number of well-flowered plants of winter-flowering Begonias, a batch of plants of Jacobinia chrysostephana, and a row of the taller-growing J. coccinea at the back.

Messrs. JOHN JEFFRIES & SON, Royal Nurseries, Cirencester, displayed a group of ornamental Conifers. Many of the best varieties of Junipers, Yews, Cedars, Picea, &c., were included, with Retinosporas, &c. Cupressus Lawsoniana lutescens Stewarti

has the ends of the recurving branches tipped with a gold colour, Abies Veitchii, Picea concolor, Picea pungens glauca var. Kosteriana and Cryptomeria elegans were among the more handsome examples displayed. (Silver Banksian Medal.)

AWARDS OF MERIT—CHRYSANTHEMUMS.

Chrysanthemum Mrs. Sidney Fox.—A large pink-coloured Japanese, of regular colouring as shown. Of large size and greater breadth than depth. Shown by Mr. D. FAIRWEATHER, Bifrons, Canterbury.

C. Edith Harling.—A single variety, flowers yellow. Shown by Messrs. W. WELLS & Co.

C. Mlle. G. Rivol.—A yellow sport from Mad. P. Radaelli (Japanese Incurved). Shown by Messrs. WELLS & Co.

C. Mad. R. Oberthur (Japanese).—A very large, white flower, already cultivated in many collections. Shown by Mr. NORMAN DAVIS, Framfield Nurseries, Sussex.

C. H. Haun.—A very large Incurved flower of reddish colour, with bronze to buff reverse. Shown by Mr. W. SEWARD, The Beeches, Hanwell.

C. Mersthum White. This is a good white single flower of several rows of florets, but of excellent, circular form. The flowers are 3 inches across, and the florets are stiff and regular. The five upper buds on several of the shoots developed almost on a level plane. Shown by Messrs. W. WELLS & Co., Ltd.

C. Miss H. Hampson.—A first-class single decorative variety, flowers pure white. If little disbudding is done, the flowers come freely and develop perfectly for 1 foot down from the top bud, and most of them are in flower at the same time. Shown by Lord ALDENHAM.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, Francis Wellesley, W. A. Bilney, W. Boxall, H. Little, G. F. Moore, R. G. Thwaites, A. A. McBean, F. M. Ogilvie, H. T. Pitt, W. Cobb, A. Dye, J. Charlesworth, E. J. Thorne, W. H. Young, H. G. Alexander, H. A. Tracy, J. Wilson Potter, C. J. Lucas, and W. Bolton.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a very fine group, principally of hybrids. In the centre were a number of the showy Lælio-Cattleya luminosa, other fine Lælio-Cattleyas being arranged around them. At each end were magnificent plants of Cattleya Fabia with eight to nine richly-coloured flowers on each, and among others of special merit were Cattleya labiata "Mrs. J. Bradshaw," a fine white flower with a slight shade of pink on the lip, and C. l. Reedleyensis, also a white variety. A good selection of Cypripediums were included. (Silver-Gilt Flora Medal.)

Messrs. JAS. CYPHER & SONS, Cheltenham, staged a fine group in which the Cypripediums were the leading feature. Among them were a very fine series of varieties of C. insigne, which included the remarkable variety Oddity; a number of yellow forms, C. l. Sanderæ being represented by six fine plants. The varieties Gulbotense, Cobhamum, Harefield Hall, Sunray, ornatum and a remarkable form of the Bohnhofianum class were also noted. Of hybrid Cypripediums, there was great variety, also Lælio-Cattleya Clive, and some other hybrid Lælio-Cattleyas, &c. (Silver-Gilt Flora Medal.)

Messrs. SANDER & SON, St. Albans, staged an effective group, the centre of attraction in which was a magnificent Cypripedium, supposed to be a form of C. Rolfeæ, but which the committee decided was a form of C. F. K. Sander, and very close to the original which was so much admired when shown October 18, 1904, when a First Class Certificate was given, a similar award being now voted for the variety King Haakon (see Awards). Other specially remarkable things in the group were Cattleya Hardyana picturata, with delicately-tinted pale rose flowers netted and mottled with white and with fine ruby purple lip with two light patches on the sides; C. insigne D. S. Brown, of fine form, and C. insigne Hodgkinsoni, a distinct light variety, the feathered light reddish-purple lines in the dorsal sepal changing to a pale lilac shade on the white apical half; Lælio-Cattleya exoniensis cærulea, white with slaty-blue front to the lip; good L.-C. luminosa Millard Bleuana, and a number of good Cypripediums, &c. (Silver Flora Medal.)

Messrs. HUGH LOW & Co., Enfield, staged a group among the C. labiata, in which were three white forms, viz., Gilmouriæ, Reedleyensis, and Amesiana. The group also contained a good selection of Cypripediums, including a fine C. Niobe with nine flowers, and C. Arthurianum with seven. (Bronze Banksian Medal.)

J. GURNEY FOWLER, Esq., Glebelands, South Woodford, showed Cypripedium insigne Glebelandsense, a large and finely-coloured flower of the Chantmi class, C. insigne J. Davis, a large form of a yellowish tint, the suface being polished and the upper half of the dorsal sepal white, the lower half bearing some spotted brown lines, and C. Madame Jules Hye.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), again showed the noble Cypripedium Germaine Opoix, Westfield variety, which was awarded a First Class Certificate at the last meeting, and which now secured the First Diploma, the second going to Mr. Wellesley's finely-coloured C. Baron Schroder punctatum. Mr. Wellesley also showed Lælio-Cattleya Mrs. W. J. Dickson (C. Gaskelliana × L.-C. Wellsiana), a good flower with white sepals and petals tinged with rose and bright ruby-purple front to the lip, and Cypripedium Arthurianum giganteum.

G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), sent the pretty white, rose-spotted Cypripedium Nandii and C. Leeanum var. corona (see Awards).

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. J. Hudson), sent Vanda cærulea albescens, a white variety with a pale blue shade on the lip.

H. S. GOODSON, Esq., Putney (gr. Mr. Day), showed Cypripedium Fairlawn and C. Miss Annie Goodson.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), showed Cattleya labiata Amesiana in grand form with five fine pure white flowers with pale pink lip on one spike and C. fulvescens superba.

Messrs. J. W. MOORE, Ltd., Rawdon, Leeds, staged a group of Cypripediums which included C. insigne Harefield Hall in fine condition, and other varieties of C. insigne, C. Milo, C. Watsonianum, Lælio-Cattleya Statteriana, Cattleya Clarkii, &c.

M. CHAS. MARON, Brunoy, France, sent a very fine white Cattleya labiata with a faint pink tint on the lip, and two C. Fabia alba.

M. MEERTENS, Mont St. Amand, Ghent, showed a selection of Cypripediums and a white Cattleya labiata.

The Hon. WALTER ROTHSCHILD, M.P., Tring Park, Tring (gr. Mr. Dye), sent Cattleya Germania inversa (Schofieldiana × Hardyana) with very attractive cream-white flowers tinged and veined with rose, the showy labellum being dark ruby-red. The finely-grown plant had three flowers.

From the ROYAL HORTICULTURAL SOCIETY'S GARDENS, Wisley, Mr. Wright showed four forms of Cypripedium Euryades. It is noteworthy that Orchids will receive attention at Wisley and that spare specimens will be welcomed.

W. M. APPLETON, Esq., Weston-super-Mare, sent Cypripedium insigne Appletonianum, a very finely-formed and richly-coloured variety; and C. Elsie (Charlesworthii × villosum).

J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. Whitelegge), showed the beautiful Odontoglossum amabile Charlesworthii with flowers of fine form suffused with rose-pink and spotted on the inner parts of the segments with red-brown.

AWARDS—ORCHIDS.

FIRST-CLASS CERTIFICATE.

Cypripedium F. K. Sander variety King Haakon (Annie Measures × bellatulum) from Messrs. SANDER & SONS, St. Albans. A near approach to the fine type which was illustrated in the *Gardeners' Chronicle*, October 29, 1904, p. 307, which is its best recommendation. The chief differences are in the spotting of some parts of the flower and in the rather longer and more pointed petals. The flower is of the largest of its class and wax-like in substance, creamy-white with heavy lines of chocolate-purple spots on the upper sepal and petal, and smaller rose-purple spots on the lip. [The council did not confirm this award, on account of the too close similarity of the flower to the original form previously certificated.]

Cattleya Fabia Goodsoni from H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day). One of the finest-coloured Cattleyas, either species or varieties, the sepals and petals being of a rich magenta rose, the lip glowing velvety crimson with gold lines at the base. The splendid specimen had two spikes of five and four flowers respectively.

AWARD OF MERIT.

Cypripedium Leeanum "Corona" from G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page). A very distinct form, with the broad, white dorsal sepal of thick substance in some degree resembling that of the unique C. L. J. Gurney Fowler. The base of the fine white dorsal sepal is yellow-green with some purple lines, the broad petals and lip yellow tinged with purple.

Cypripedium Stephanos (Pollettianum × cenanthum superbum) from The Rev. J. C. B. FLETCHER, Mundham Vicarage, Chichester. A very distinct and pretty hybrid with a resemblance to some of the unspotted forms of C. Euryades. Upper sepal white with a green base and some feathered purple lines; petals and lip yellow, heavily tinged with brownish-purple.

DIPLOMA AWARDS.

CYPRIPEDIUM FAIRRIEANUM.—*First Diploma* to Cypripedium Fairrieanum dark variety, from Messrs. SANDER & SONS.

CYPRIPEDIUM FAIRRIEANUM HYBRIDS.—*First Diploma* to Cypripedium Germaine Opoix Westfield variety from FRANCIS WELLESLEY, Esq. (gr. Mr. Hopkins). The noble variety which secured a First-Class Certificate at the last meeting (see *Gardeners' Chronicle* Supp., November 10, p. iv.). The last and best of a small batch raised by Monsieur Opoix in the gardens of the Luxembourg Palace between C. Madame Cofinet and C. Fairrieanum. A model flower of fine proportions and attractive colour.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., chairman; and Messrs. J. Cheal, W. Bates, S. Mortimer, A. Dean, G. Kelf, A. R. Allan, Ed. Beckett, W. Pope, R. Lye, H. J. Wright, H. Markham, H. Parr, J. Davis, Jno. Basham, Jno. Lyne, G. Reynolds, J. Willard, F. D. Tuckett, J. Jaques, Chas. Foster, Owen Thomas, and W. Poupart.

Mrs. HENDERSON, Sedgwick Park, Horsham (gr. Mr. C. Maddell), showed some splendid Apples, principally dessert varieties. The collection, which embraced 40 dishes, was remarkable for the high colour of the fruits. (Silver-Gilt Knightian Medal.)

E. G. WYTHES, Esq., Bickley Park, Bickley, Kent, showed several dishes of Apples gathered from very old trees; a plate of Discovery Potatos, and three kinds of Onions, grown in unmanured soil, and a very fine dish of Doyenné du Comice Pears.

Messrs. GEO. MASSEY & SONS, 17, Market Place, Spalding, showed 50 baskets of Potatos, all clear-skinned, evenly matched tubers of new and popular varieties. (Bronze Banksian Medal.)

Messrs. DOBBIE & Co., Rothesay and Marks Tey, showed their Victoria Kale, one of the best kinds of this hardy green vegetable, and which has already received an Award of Merit from the Fruit and Vegetable Committee after trial in the Society's old gardens at Chiswick.

CHELMSFORD AND DISTRICT CHRYSANTHEMUM

NOVEMBER 6, 7.—The annual exhibition of the above society was held on these dates in the Corn Exchange, Chelmsford, and proved to be one of the best the society has ever held. The entries were in excess of previous years and the quality of the exhibits was of a high standard. Unfortunately the weather was unfavourable.

In the class for a large group of Chrysanthemums the 1st prize was a silver Cup, given by Captain Cruickshank, and this was won by H. C. WELLS, Esq., Broomfield Lodge, Mrs. W. GRAY, Phœnix House, being 2nd.

In the smaller group class, ABRAHAM JACKSON, Esq., Great Baddow, led, and he was closely followed by Rev. Canon HULTON, Boreham, Mrs. C. H. GRAY being 3rd.

Mr. P. LINN, Great Baddow, was the winner of the Amateur's Cup, presented by Temple Cowell, Esq.

A prominent feature of the show was a group of single Chrysanthemums, arranged the full length of the platform, and exhibited by Mr. C. J. SIMPSON, St. John's Nursery, Chelmsford.

The principal prize winners in the open classes for cut blooms were H. C. WELLS Esq., Messrs. SALTMARSH & SON, Mr. C. J. SIMPSON, Mrs. W. GRAY, Mr. H. HICKS, and Rev. Canon HULTON: while in the amateurs' classes, Mr. J. FALCONER, Mr. P. WISEMAN, Mr. W J. WARREN, Mr. P. LINN, and E. C. PAGE were successful exhibitors.

Floral decorations made a grand show. Exhibits of fruit and vegetables were exceptionally good. Mr. W. SEABROOK, and Messrs. SALTMARSH & SON both showed good produce. *C. J. S.*

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 11.—*Committee present:* Messrs. E. Ashworth (chairman), R. Ashworth, Thorp, Cowan, Sander, Rogers, Stevens, Warburton, Leemann, Smith, Ashton, Williamson, Parker, Weathers (hon. sec.).

There was a capital display of plants at this meeting, and a few good things were selected by the Committee for award.

Groups of Orchids were exhibited by W. THOMPSON, Esq., Stone, H. J. BROMILOW, Esq., Rainhill, G. W. JESSOP, Esq., Rawdon, and WALTER LAVERTON, Esq., Nantwich, for which Silver Medals were awarded. Mr. D. MCLEOD was awarded a Bronze Medal.

S. GRATRIX, Esq., Whalley Range (gr. Mr. Cypher) exhibited a good form of Cattleya × Hardyana var. alba, Gratrix's var., which gained a First Class Certificate; Cypripedium × Leoniæ, Gratrix's var., was given an Award of Merit.

Messrs. STANLEY & Co., Southgate, London, N., gained an Award of Merit for the pretty natural hybrid Odontoglossum × Huyvierianum, the parents of which are O. cordatum × O. nebulosum. Cattleya × Fabia var. alba, C. labiata var. pardina, and several other distinct plants were shown by the same firm.

W. FARRER, Esq., Carnforth (gr. Mr. Proudlock), exhibited Cypripedium × Leyburnense and C. × Chapmani var. magnificum. G. W. JESSOP, Esq., Rawdon, Leeds (gr. Mr. Wilkinson), was given a Botanical Certificate for Cirrhopetalum Medusæ. A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), obtained First Class Certificates for Lælio-Cattleya × Decia and Cypripedium × Germaine Opoix, two handsome Orchids, particularly the former. E. ROGERSON, Esq., Didsbury (gr. Mr. Price), exhibited a distinct variety of Cypripedium × Actæus. *P. W.*

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 13, 14.—The Guildhall was again used to accommodate the autumn exhibition of this society, held on these dates. The display was much the best of the series, and one of the most complete exhibitions seen this season. The quality of the cut blooms was of a high standard of excellence, especially in the Incurved section. Decorative varieties in sprays arranged in vases were a distinct feature. Fruit and vegetables, too, were of the best quality.

CUT BLOOMS.

The principal class was for 36 Japanese blooms. Four exhibitors competed. The Dowager Lady ASHBURTON, Melchet Court, Romsey (gr. Mr. G. Hall), was successful, having especially fine examples of F. S. Vallis, Mrs. J. E. Dunne, Princess Mafalda, Mrs. W. Knox, J. H. Silsbury, John Cumberland, Bessie Godfrey, and Marquise V. Venosta. Sir C. SWINFEN EADY, Oatlands Lodge, Weybridge (gr. J. Lock), was a good second.

Twenty-four Japanese blooms in not fewer than eighteen varieties.—The premier award was made in favour of E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), among six contestants, with a very fine exhibit of well-known varieties; 2nd, J. B. TAYLOR, Esq., Sherfield Manor, Basingstoke (gr. Mr. J. Wasley), with but little inferior blooms.

Twelve Japanese blooms.—In this class four competed, the best exhibit being that shown by W. H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood), and he was followed by M. HODGSON, Esq., Morton House, Kingsworthy, Winchester (gr. Mr. A. J. Marsh). In the class for six Japanese varieties, staged in vases, five growers competed. Mr. G. HALL staged exceedingly fine blooms, and secured the premier award quite easily.

Any white Japanese variety.—Mr. ELLWOOD staged the best five blooms, having the variety Mad. R. Oberthur in fine form.

Incurved varieties were not numerous, but they were of high quality. In the class for 36 blooms in not fewer than 24 varieties, P. RALLI, Esq., Ashstead Park, Epsom (gr. Mr. J. Hunt), was an easy 1st with large, perfectly-formed blooms, quite the best seen this season. Mr. A. J. MARSH was 1st for 24 Incurved blooms with a thoroughly representative set.

Single-flowered varieties, arranged in vases, made a fine display. In the class for six bunches of these flowers, not disbudded, there were seven exhibits. A. J. RALLI, Esq., Twyford Lodge, Winchester (gr. Mr. J. Hughes), was successful with high-class blooms on long sprays.

Mr. A. E. TAYLOR, 3, Hillside Terrace, Winchester, was 1st in a similar class for decorative varieties.

Plants were not equal to those shown in former years. For a group arranged for effect in a space of 8 feet by 7 feet, there were four competitors, Lord NORTHBROOK, Stratton Park, Winchester (gr. Mr. E. Henderson), being placed 1st. Col. F. A. DICKENS, Edge Hill, Winchester (gr. Mr. G. Adams), was 1st for a group of Chrysanthemums suitable for conservatory decoration, as he also was for plants of white and yellow varieties.

Classes for floral decorations created much interest. The most tastefully-arranged dinner table—Orchids excluded—was decorated by Mrs. W. B. CANNON, Shirley, Southampton.

Non-competitive exhibits were staged by Messrs. E. HILLIER & SONS, Winchester, who had a collection of Apples of leading sorts. Mr. ELLWOOD had a collection of highly-coloured Apples interspersed with fruiting branches of Euonymus europeus. Messrs. B. LADHAMS & Co., Shirley, staged Carnations and autumn-tinted leaves.

BIRMINGHAM & MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT AND HORTICULTURAL.

(Concluded from page 347.)

NOVEMBER 13, 14, 15.

PLANTS.

Primulas.—J. A. KENRICK, Esq., Bellow Court, Edgbaston (gr. Mr. A. Cryer), won four first prizes and one second for these, and one first prize for specimen Palms. The handsomest tree Fern came from A. HUGHES, Esq., Knowle (gr. Mr. T. Parry). The Rev. H. BUCKSTON, Derby (gr. Mr. A. Shambrook), was placed first in a class for twelve Cyclamen, and W. S. POWER, Esq., Derby, took the lead for six Cyclamen in the amateur classes.

CUT FLOWERS.

Only two competitors entered in a new class for Carnations to be shown on table space of 10 feet by 4 feet. 1st, Mr. S. MORTIMER, Farnham, Surrey, with a prettily arranged group; 2nd, Messrs. JAS. RANDALL & SONS, Shirley, Birmingham. The first prize of £1 for the best bouquet of Chrysanthemums was well won by E. DARBY, Esq., Selly Oak, Birmingham, who relied upon bronze-tinted flowers.

Epergnes of Flowers.—The first award in this class went to Miss DAVIS, Pershore, who used Orchids and Chrysanthemums; 2nd, W. F. BENNETT, Esq., Coventry, whose flowers were confined to Orchids.

Basket of Autumn-tinted Foliage and Berries.—Eight baskets were staged, and the one that pleased the judges most came from Mr. T. JONES, of Ruabon; 2nd, Mr. C. THOMAS, Handsworth.

TABLE DECORATIONS.

Twenty-eight tables, each 8 feet by 4 feet, decorated with Chrysanthemums, Ferns, and foliage were placed in the side galleries, and although no originality in the arrangement of the flowers could be observed, a number of them were pretty, and the judges had a rather difficult task in awarding the first prize of £3, offered by Mr. J. Duller, Birmingham. 1st, H. NORMANSELL, Esq., Edgbaston; 2nd, Miss L. BASTOCK, Moseley; 3rd, Miss DAVIS, Pershore.

FRUIT.

The first prize for a collection of British-grown fruit to occupy space not exceeding 40 square feet was won by the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), who had well-shouldered and finely finished bunches of Muscat of Alexandria and Black Alicante Grapes, highly coloured Cox's Pomona, Blenheim Pippin, and King of the Pippin Apples, and a good dish of Pitmaston Duchess Pears; 2nd, J. W. FLEMING, Esq., Romsey (gr. Mr. W. Mitchell).

For a collection of British-grown hardy fruit arranged on a table 12 feet by 8 feet there were only three competitors, compared with seven last year, and the judges experienced little difficulty in awarding the silver challenge cup given by Sir John Holder, Bart., and £5 to the Earl of CHESTERFIELD, Home Lacey, Hereford (gr. Mr. W. Humphries), whose collection included beautiful dishes of Peasgood's Nonsuch, The Queen, Chatley's Kernel, and Cox's Pomona Apples. Of Pears Pitmaston Duchess, Beurré Bosc and Beurré Diel were the best.

GRAPES.

For six bunches in not fewer than three varieties (open), the Earl of HARRINGTON (gr. Mr. J. H. Goodacre) obtained the 1st prize; 2nd, J. W. FLEMING, Esq., (gr. Mr. W. Mitchell).

The best three bunches of black Grapes came from STUDLEY COLLEGE, Warwickshire; 2nd, Lord BAGOT (gr. Mr. T. Bannerman).

The Earl of HARRINGTON (gr. Mr. J. H. Goodacre) staged the best three bunches of Muscat of Alexandria Grapes; J. W. FLEMING, Esq. (gr. Mr. W. Mitchell), being 2nd.

In a class for white Grapes (Muscats excluded) the Rt. Hon. T. F. HALSEY, Hemel Hempstead (gr. Mr. H. Folkes), beat his only opponent, F. MARTINEAU, Esq., Edgbaston (gr. Mr. G. Brasier).

APPLES AND PEARS.

The best six dishes of culinary and the best six dishes of dessert Apples came from Lord ALDENHAM, Elstree (gr. Mr. E. Beckett). The Earl of HARRINGTON (gr. Mr. J. H. Goodacre) was to the fore with eight dishes of Pears, and W. MAYNARD, Esq., Ledbury (gr. Mr. W. E. Hyde), exhibited the best four dishes of Pears.

VEGETABLES.

Although competition in the collections of vegetables was not so keen as in previous years, the produce shown was of a high order of merit.

For a collection of nine distinct kinds of vegetables, for which liberal prizes were offered by Messrs Sutton & Sons, Reading, there were nine competitors. 1st, Lord ALDENHAM, Elstree (gr. Mr. E. Beckett), with a superb lot.

Messrs. Webb & Sons, Stourbridge, offered four prizes for collections of eight distinct kinds, but only five exhibits were staged. 1st, G. J. EVESON, Esq., Knowle (gr. Mr. T. J. Griffiths), with a very even lot, in which Onions, Tomatos and Leeks stood out prominently.

Messrs. R. Smith & Co.'s prizes were offered for nine distinct kinds, and brought three competitors only. 1st, T. H. PUGH, Esq., Newtown.

For Mr. R. Sydenham's Silver Challenge Cup, offered to the exhibitor who gained the greatest number of points in certain classes, two competitors tied, *viz.*, Mr. H. Folkes (gr. to the Hon. T. F. HALSEY, Hemel Hempstead) and Mr. R. A. HORSPOOL, of Ruabon, with 36 points each. As each of these exhibitors had won the cup twice before, Mr. Sydenham decided to give a cup of equal value to each competitor.

A similar difficulty arose in connection with the local Challenge Bowl, two exhibitors being bracketed with 34 points apiece. In this case it was decided to count each as a win, and if either wins it a third time it will become his absolute property. The winners on this occasion were Mr. E. DEAKIN, Hay Mills, and Mr W. PICKARD, Acock's Green.

Prizes were offered by Messrs. W. H. Simpson & Sons, Edgbaston, and by Messrs. Thomson & Co., Birmingham, for single dishes of vegetables.

HONORARY EXHIBITS.

Messrs. CLIBRANS, Altrincham, staged a collection of Chrysanthemums and a few dishes of hardy fruit. (Silver Medal.)

Messrs. POPE & SON, King's Norton, exhibited brightly-coloured Conifers and other shrubs, in the centre of which was a handsome plant, about 14 feet high, of Cupressus macrocarpa lutea. (Silver Medal.)

Messrs. WEBB & SONS, Stourbridge, sent a large collection of Potatos and plants of Begonia Gloire de Lorraine. (Large Gold Medal.)

Messrs. SUTTON & SONS, Reading, showed a collection of vegetables comprising Tomatos, French Beans, Onions, Celery, Carrots, &c. (Large Gold Medal.)

Messrs. R. SMITH & Co., Worcester, had a large batch of Hollies, Skimmias, richly-coloured Aucubas, and two excellent plants of Picea Parryana glauca. (Small Gold Medal.) The same firm also received a Silver Medal for 100 dishes of Apples and Pears.

The finest collection of hardy Conifers and ornamental shrubs came from Messrs. JOHN WATERER & SONS, Bagshot, Surrey, who had handsome standard and bush Hollies, also Retinosporas, Thujas, Gold and Silver Yews, a splendid plant of Berberis nepalensis (B. Bealei), and Osmanthus myrtifolius in flower. (Large Gold Medal.)

Messrs. H. J. & A. HUGHES, Water Orton, sent flowering plants and floral devices. (Silver-Gilt Medal.)

From the LADY WARWICK COLLEGE, Studley, Warwickshire, came Chrysanthemums, Grapes, bottled fruit, and jellies. (Silver Medal.)

Mr. R. W. GREEN, Wisbech, showed 55 varieties of Potatos. (Silver Medal.)

Messrs. HEWITT & Co., Solihull, contributed a nicely-arranged group of Conifers, edged with golden-leaved Privet. (Silver Medal.) They also showed Carnations and Chrysanthemums, for which a Bronze Medal was awarded.

Messrs. JAMES RANDALL & SONS, Shirley, showed bouquets, baskets and vases of flowers, together with plants in flower, and foliage plants. (Silver Medal.)

Messrs. SNEYD & Co., Hall Green, Birmingham, put up a pretty group of Chrysanthemums, containing splendid flowers of the different sections. (Silver Medal.)

An exhibit of educational value came from Mr. J. CRAIG, Experimental Gardens, Droitwich, who staged upwards of 50 varieties of Apples and a number of excellent bunches of Gamay Noir Grape grown out-of-doors. Seven boxes of Lane's Prince Albert Apples were displayed to show the effects of certain kinds of manures and different methods of pruning. The best and heaviest fruits were gathered from trees treated with stable manure and inorganic chemical manure, and the lightest crops from trees manured with stable manure only. (Small Gold Medal.)

Messrs. RICE BROS., Olton, arranged a pleasing exhibit of Alpine plants and cut Chrysanthemums. (Silver Medal.)

Messrs. THOMSON & Co., Sparkhill, Birmingham, put up a densely-packed group of Chrysanthemums. (Silver Medal.)

Mr. W. J. GODFREY, Exmouth, showed a collection of Chrysanthemums, in which were very good blooms of Mrs. R. Luxton, Admiral Beresford, and Gladiator. (Small Gold Medal.)

A similar award went to Mr. NORMAN DAVIS, Framfield, Sussex, who staged upwards of 40 large, well-finished flowers of Japanese Chrysanthemums.

The finest collection of floral designs came from Messrs. GUNN & SONS, of Olton, whose exhibit displayed great artistic merit. (Large Gold Medal.) Messrs. GUNN also had a group of Decorative Chrysanthemums, for which a Silver-Gilt Medal was awarded.

An assortment of floral designs came from Messrs. PERKINS & SONS, Coventry, but they were not so numerous or so effective as those from the last-named exhibitors. (Large Gold Medal.)

Mr. E. BUCKEN, King's Heath, made a very creditable display with 50 dishes of Apples. (Silver Medal.)

From Messrs. HEATH & SON, Cheltenham, came a bright group of Carnations and Orchids, and a collection of uncommon New Zealand shrubs. (Silver Medal.)

Mr. WILLIAM SYDENHAM, Tamworth, showed a meritorious collection of single and border Chrysanthemums. (Silver Medal.)

The only exhibit of Cyclamen "not for competition" came from the Rev. H. BUCKSTON, Derby (gr. Mr. A. Shambrook). The plants were well grown and carried good flowers. (Silver Medal.)

Miss THOMPSON, Handsworth, staged a large collection of uncommon Cactaceous plants. (Silver Medal.)

Messrs. YATES, Birmingham, showed a collection of well-grown vegetables. (Large Gold Medal.)

Messrs. W. B. ROWE & SON, Worcester, exhibited 70 dishes of hardy fruits. (Silver-Gilt Medal.)

Messrs. PEWTRESS BROS., Hereford, sent a collection of Apples. (Silver Medal.)

The finest non-competitive exhibit of Apples came from the KING'S ACRE NURSERIES, LTD., Hereford, who had magnificent fruits of Blenheim Pippin, Boxhill Pippin, Golden Noble, James Grieve, Court Pendu Plat, and Peasgood's Nonsuch. (Large Gold Medal.)

Bronze Medals were awarded to Mr. J. E. KNIGHT, Wolverhampton, for hardy shrubs and flowers; Messrs. JAS. SIMPSON & SON, Harborne, for variegated Conifers and other shrubs; Mr. VINCENT SLADE, Torquay, for Zonal Pelargoniums; and to the undermentioned firms for Chrysanthemums: Mr. H. J. JONES, Lewisham; Messrs. CHEAL & Co., Acock's Green; Messrs. J. PEED & SON, West Norwood; The VINERIES, LTD., Acock's Green; Mr. H. WOOLMAN, Tyseley, Birmingham; and Mr. J. S. EARP, Tamworth.

[Owing to a printer's error last week the sum offered in prizes was stated to be £50. It should have read £450. ED.]

WOOLTON AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 14.—The eighth annual exhibition of this society was held in the Church Hall, Woolton, on this date. The exhibits in every class quite maintained the high standard of excellence seen in former exhibitions of this society.

The Silver Challenge Cup given by Mrs. F. H. Gossage, as a prize in the premier class of 24 Japanese blooms, was awarded to Sir. WM. H. TATE, Bart. (gr. Mr. George Haigh), the 2nd prize being secured by ALFD. HOOD, Esq. (gr. Mr. John Hall). In the classes for 18 Japanese blooms and for 18 Incurved varieties F. H. GOSSAGE, Esq. (gr. Mr. Joseph Storey) secured the 1st prize; THOS. CLARKE, Esq. (gr. Mr. Jas. Clarke, being 2nd in the former class, and Mrs. COPE (gr. T. Carling) 2nd for the Incurved varieties.

To Sir WM. H. TATE, Bart., was awarded the 1st prize for the collection of cut Chrysanthemums arranged for effect. F. H. GOSSAGE, Esq., being placed 2nd; 3rd, Sir JOHN J. BRUNNER, Bart., M.P. (gr. Jas. Wilson). The last-named exhibit staged a magnificent group of single varieties, and secured 1st honours, with F. H. GOSSAGE, Esq., and Sir WM. H. TATE, Bart., following very closely. In the classes for trained plants P. W. BARR, Esq. (gr. Mr. T. Keightley) captured four 1st and three 2nd prizes in the seven open classes.

Two bunches each of black and white Grapes shown by HAROLD CUNNINGHAM, Esq. (gr. Mr. Wm. Wilson), were really first-class produce. With other kinds of fruit Col. R. IRELAND-BLACKBURNE (gr. Mr. Geo. Hammond) was, as is usual at these shows, well to the fore. The exhibits of vegetables were, in the opinion of most persons, the best ever shown at Woolton.

H. D. Shoosmith, Hon. Sec.

SOUTH SHIELDS AND NORTHERN COUNTIES CHRYSANTHEMUM.

NOVEMBER 14, 15.—This society held its annual exhibition on these dates, and the show was again a success. No fewer than seven silver cups were offered, as well as much money in prizes. Japanese blooms were very good, but the Incurveds were exceptionally fine, being the best ever shown at South Shields.

Cut blooms.—In the leading class for 36 Japanese blooms in not fewer than 18 varieties, Mr. G. E. Thomas (gr. to the Marquis of RIPON, Studley Royal) was 1st with a stand containing fine blooms of the best varieties; 2nd, Mr. G. CROOKS, Droitwich.

In the class for 18 Japanese blooms, Mr. HARDCASTLE was placed 1st with a fine lot of blooms, being followed by Mr. T. PATTISON, Tunstall Manor. Mr. HARDCASTLE was also successful in the class for 12 Japanese blooms in distinct varieties, and also for three Japanese blooms of a white variety. The prize for the premier Japanese bloom was awarded to Mr. CROOKS for a fine specimen of F. S. Vallis.

Incurved flowers were, as stated, far above the average. Mr. C. JENNINGS (gr. to Mr. F. W. JAMESON, North Ferriby), won the silver cup offered by Mr. Alex Purvis for 24 blooms of not fewer than 12 varieties. Mr. CROOKS was awarded the 2nd prize for a fine collection. Mr. JENNINGS was also successful in the class for 12 Incurved blooms.

Mr. J. SUMMERS carried off the principal prizes in the decorative classes. The chief prize-winners in the classes for plants and groups of plants were Messrs. T. Reay, T. Pattison, N. Mothersole, E. J. Baser, and J. W. Foster. *C. O.*

CHESTER PAXTON.

NOVEMBER 14, 15.—The 18th annual exhibition of this society was held at the Town Hall, Chester, on these dates, when the entries exceeded those of any previous year. In the hardy fruit classes nearly 300 more dishes were entered than last year, which was a record one. Through the liberality of Mrs. MacGillicuddy, another class for a mixed group was this year added to the Chrysanthemum section, for which this lady also offered a silver salver. Mr. Stubbs (late gardener to Major MacGillicuddy, and now in the service of Mr. F. B. SUMMERS, Bache Hall) carried off not only this prize, but the first prize in the other two group classes, thereby capturing the two old challenge cups and the new silver salver.

In the classes for black and for white Grapes, Mr. J. SAUNDERSON, Bodnant, took first honours. The entries in the classes for dessert Apples were very numerous. Messrs. CLIBRANS, Altrincham, were awarded the society's Gold Medal for an exhibit of Chrysanthemum blooms, including several new varieties. Messrs. DICKSONS', Ltd., Chester, were awarded a Silver Medal for collections of Potatos and of flowering plants; Messrs. MCHATTIE & Co., Chester, gained the society's Bronze Medal for a collection of Apples and another of flowering plants. The Duke of WESTMINSTER, Eaton (gr. Mr. N. F. Barnes), staged a collection of Apples, for which he was awarded the society's special large Bronze Medal.

NEWPORT (MON.) CHRYSANTHEMUM.

NOVEMBER 15.—The 18th annual show of this society was held in the Gymnasium, Newport, on this date, and, though some of the classes were not so well filled as at some previous exhibitions, the building contained a creditable display of flowers and fruits. Groups of plants were especially good; Apples were shown well, the non-competitive collection of Apples and Pears staged by Mr. J. BASHAM, Fair Oak Nursery, Bassaleg, being of a high standard of quality.

Groups of Chrysanthemums.—In the open class for a group arranged with ornamental leaved plants, and occupying an area of 50 square feet, two bright displays were arranged, the best being staged by Messrs. G. WILLIAMS & SONS, Cardiff; 2nd, R. T. MANN, Esq. (gr. Mr. J. Wiggins).

In the smaller class, open only to gentlemen's gardeners and amateurs for a group of Chrysanthemums measuring 40 square feet, a challenge bowl, value 8 guineas, and £2 was offered as the 1st prize. Mr. R. Long (gr. to W. F. DAWSON, Esq.), won easily with splendidly grown and well-arranged plants, having blooms, many of them equal to the best staged in the cut bloom classes. The only other exhibitor in this class was H. LE BRASSEUR, Esq.

PLANTS.

The best group of miscellaneous plants was shown by Col. C. T. WALLACE (gr. Mr. Powell); 2nd, H. OAKLEY, Esq. (gr. Mr. F. Wood), Chepstow.

Mr. R. FRY showed the best three plants of bush-trained Chrysanthemums, while C. F. COLBORNE, Esq. (gr. Mr. Harris), was the only exhibitor of three pyramid-trained plants, having well-flowered specimens of Pride of Madford, Daisy, and Souvenir de Petite Amie. Mr. HARRIS was also 1st for three bush plants of single varieties. Mr. POWELL won in the class for three Orchids, and also for six plants suitable for the decoration of a dinner table.

CUT BLOOMS.

Twenty-four Japanese blooms.—The 1st prize in this class included a challenge bowl, valued

at 10 guineas. Two exhibitors competed with blooms of almost equal merit, but Mr. PITT, Brecon Road Nursery, Abergavenny, had the best coloured blooms, and was awarded the 1st honours. He staged President Viger, Bessie Godfrey, Mrs. Beckett, Mad. R. Oberthur, Mr. Louis Remy, Mrs. Williams, Duchess of Sutherland, Montigny, W. R. Church, Mrs. Bryant, Mrs. Dalton, Mrs. Vallis, Henry Pitt; 2nd, Mr. DUFF.

Twelve Japanese blooms.—The 1st prize was secured by Mr. F. S. Daniels, gardener to F. PHILLIPS, Esq., for good deep blooms of the varieties Mrs. J. Dunn, Duchess of Sutherland, W. Duckham, Mrs. Vallis, F. S. Vallis, Lady Conyers, &c. Messrs. G. WILLIAMS & SONS were awarded the 2nd prize, and Mr. PITT the 3rd prize.

Incurved varieties.—A class was provided for six Incurved Chrysanthemums. Mr. PITT secured the 1st prize with examples of Lady Isabel, C. H. Curtis, Louisa Giles, Mrs. W. C. Egan, Hanwell Glory, C. N. S. Threlfall; 2nd, Mr. F. WOOD.

Vase Classes.—There was very close competition in the class for 18 Japanese blooms in six vases, and very little difference obtained between three exhibits. Mr. R. LONG was placed 1st, however, with handsome blooms of Mrs. Vallis, Bessie Godfrey, F. S. Vallis, Mrs. J. Lewis, &c.

Mr. F. W. FRANCES, Somerton, won in the class for three vases containing Japanese varieties; 2nd, Mr. W. G. PARKS, Clontarf; and Mr. R. FRY had the best six vases of single varieties.

FRUIT.

A class was provided for six dishes of Apples, the prizes being offered by Mr. Basham. Mr. DUFF took the lead in a strong competition with clean, large fruits; 2nd, Mr. POWELL. Mr. R. LONG had the best two dishes of Pears, and Mr. J. Green (gr. to F. L. DAVIES, Esq.), the best two bunches of Black Grapes in Black Alicante.

NON-COMPETITIVE EXHIBITS.

Mr. BASHAM, Fair Oak Nursery, staged a fine collection of Apples and Pears. Messrs. CASE & SON, Cardiff, showed wreaths, bouquets, &c. Miss A. M. HARDING, Newport, exhibited Carnations, Roses, Chrysanthemums, &c.

BARNSLEY CHRYSANTHEMUM.

NOVEMBER 15, 16.—The 20th exhibition of this society was held on these dates, when the exhibits seen were better than ever. The event is a great social one for Barnsley, and this year had for its president the Mayor of the town.

In the open classes the Incurved varieties were specially good. Vegetables were a splendid show, but fruits were hardly up to the standard.

W. H. BASS, Esq., Burton-on-Trent (gr. Mr. R. Nisbet), was the principal prize-winner in the classes for Japanese and Incurved varieties, other successful competitors being A. S. WILSON, Esq., Cottingham, near Hull (gr. Mr. H. Willcocks), and Countess of ROSS, Womersley Park, Yorkshire (gr. Mr. A. Brook).

EDINBURGH CHRYSANTHEMUM.

NOVEMBER 15, 16 and 17.—The annual exhibition of the above society held in the Waverley Market on these dates was quite equal to any of the fine displays previously held at Edinburgh. The number of entries in the cut bloom section was well up to the average of former years, and exceeded in the Decorative classes. The quality of the Japanese blooms seen has never been surpassed at these shows, and they were certainly superior to anything seen elsewhere this year. All the blooms were arranged in vases, and as many as 22 classes were provided, the prizes offered being exceptionally large. Plants were but a moderate show. Grapes of good quality were seen, but the exhibits of hardy fruit and vegetables were but mediocre in quality. As is usual, the management was of the best, although the show was the first held since the new secretary, Mr. A. D. Richardson, was appointed.

OPEN CLASSES.

Cut blooms.—The principal class for Japanese varieties, and in which the leading prize included a piece of plate value £20, offered by the City of Edinburgh Council, was for 15 vases of distinct varieties, three blooms in each vase. Six growers competed, and furnished a magnificent display. Mr. T. Lunt (gr. to Captain STIRLING, Keir, Dunblane) won easily with one of the finest sets of blooms seen this year. The varieties were: F. S. Vallis, Mrs. F. W. Vallis, Mrs. W. Knox, Mrs. G. Mileham, Mad. P. Radaelli, Reginald Vallis, Marquise V. Venosta, Jumbo, Miss O. Miller, Henry Stowe, Bessie Godfrey, Algernon Davis, Lady Conyers, J. H. Silsbury, and Mad. Cadbury. The blooms were judged by points, and of a possible 180 points this exhibit was awarded 140. Mr. D. NICCOLL, Rossie, Forgandenny, followed with 118 points. He had exceptionally fine blooms of J. H. Silsbury, Lady Conyers, Reginald Vallis, and F. S. Vallis. 3rd, Mr. JAMES MARTIN, Winchcombe, Glos.

Twenty-four Japanese blooms, distinct.—The Scottish Challenge Cup class for 24 blooms of Japanese varieties was an important one. Twelve exhibitors competed. Mr. A. Hutton (gr. to G. KEITH, Esq., Usan House, Montrose) was awarded the 1st prize, which included £10 in money. He showed excellent examples of the varieties Lady Conyers, J. H. Silsbury, Mrs. W. Knox, F. S. Vallis, Mad. Cadbury, Miss Olive Miller, &c. 2nd, Mr. J. STEWART, Dunkeld House, with a meritorious exhibit.

For the Queen Alexandra prize of £10 in the class for eight vases of Japanese blooms in not fewer than six varieties, four exhibitors competed. Mr. J. FRASER, Kilravock, Edinburgh, was awarded the prize for an average exhibit. The exhibit shown by Mr. A. STENHOUSE, Edinburgh, was placed 2nd.

Eighteen Japanese blooms, distinct.—This class was for six varieties, three blooms of each variety. Nine exhibits were seen, the best being those shown by Mr. R. WHANNELL, The Drum, Gilmerton. 2nd, Mr. J. ADAMS, St. Clement's, Forfar.

Six Japanese blooms of one variety.—This class elicited keen competition, which resulted in Mr. MARTIN winning among ten contestants with fine blooms of F. S. Vallis. One of these flowers was adjudged the premier bloom in the show. It measured 9 inches in width and as many in depth. Mr. LUNT was awarded the 2nd prize for the same variety.

Mr. LUNT had the best exhibit of 12 varieties in four vases, having large, well-coloured examples of popular varieties.

In a class for four varieties Mr. J. FRASER, Shandon, won the 1st prize easily, being followed by Mr. J. WALDIE, Dollarbeg.

Incurved varieties.—These flowers are never of great excellence at Edinburgh. Mr. MARTIN won with examples of moderate quality in the two classes provided for Incurved varieties.

Single varieties.—These charming flowers formed a fine display, as they are always given much prominence in this exhibition. In the class for three vases of distinct varieties nine competed, Mr. A. KNIGHT, Brayton Castle, Carlisle, having the premier exhibit, staging good quality blooms of Edith Pagram, its bronze sport, and Miss Annie Holden. 2nd, Mr. J. HAY.

A class was also included in the schedule for four vases of partially disbudded single varieties, three sprays of each variety to a vase. Competition was exceptionally keen, with the result that Mr. J. HAY's exhibit was adjudged the best, Mr. W. ARMSTRONG, Musselburgh, being awarded the 2nd prize.

In a class for three varieties of single Chrysanthemums in which quality and decorative effect were to be the first considerations, there was a commendable display. Mr. GALLOWAY, Gosford, won the 1st prize amongst 13 competitors.

No fewer than 17 exhibits were seen in the class for one vase of a single variety, disbudded, and arranged for effect, with any foliage. Mr. D. KIDD, Carberry Towers, won the premier prize, with medium-sized blooms of J. H. Silsbury, intermixed with leaves of Prunus Pissardii, Oaks, and trails of Ampelopsis; 2nd, Mr. A. KNIGHT.

AMATEUR CLASSES.

Amateurs staged cut blooms numerously and well. Dr. MAXWELL DAWSON, Buckhaven, won in the class for four vases of large Japanese varieties with creditable specimens of well-known sorts.

Plants were of fair quality, but they were mainly much too large, stiffly trained, and were lacking in foliage. Mr. W. MICHIE, Boroughfield, Edinburgh, was placed 1st for plants. Mr. W. PULMAN had the best specimens of four Japanese varieties, among which Mrs. Greenfield, Swanley Giant, and Nellie Pockett were fairly well represented. Mr. J. FRASER won in the class for Japanese varieties grown in 6-inch pots. He showed very large plants that were carrying from 10 to 16 blooms each. Mr. MICHIE won a like position for Pompon varieties, with extremely well-flowered plants.

Epergnes and bouquets of Chrysanthemums were numerous and good.

HONORARY EXHIBITS.

A Gold Medal was awarded to Messrs. SUTTON & SONS, Reading, for 106 dishes of high quality Potatos. A Silver-gilt Medal was awarded to Messrs. DOBBIE & Co., Rothesay, for a collection of Turnips and Potatos. Silver Medals were awarded Messrs. W. THOMSON & SONS, Cloverfords, for Grapes; Messrs. W. WELLS & Co., Merstham, Surrey, for Chrysanthemums; Messrs. JAMES DICKSON & SONS, Edinburgh, for a collection of Apples.

MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL.

NOVEMBER 15, 16, 17.—In the worst possible weather, the above society held its annual Chrysanthemum show in the Botanical Garden on these dates. There was a magnificent display of plants and blooms, not a small feature being a collection of two thousand plants in pots grown in the Botanical Gardens. Mr. JAMES BROWN showed the best nine large-flowered Chrysanthemum plants in pots, and he also won the 1st prize for a group of Chrysanthemums arranged with suitable foliage plants. Mr. GOSSAGE had the best Incurved blooms in the two important classes for these flowers, and he was 2nd to Mr. F. S. VALLIS in the class for 36 Japanese blooms, but he was again 1st for 36 miscellaneous blooms of Chrysanthemums. Mr. VALLIS had the best 18 Japanese blooms in not fewer than nine varieties, and the best 12 Japanese blooms of distinct varieties. In the class for 18 blooms, to include 24 Japanese and 24 Incurved varieties, Mr. C. MAYER won.

BRADFORD CHRYSANTHEMUM.

NOVEMBER 16, 17.—This society's exhibition was held on these dates in the St. George's Hall. The exhibition, which was the twentieth of the series, made a brilliant spectacle. The entries were slightly more numerous than last year.

In the premier class for 24 Japanese blooms, Mr. A. Chandler (gr. to Mr. ARTHUR JAMES, Rugby) was awarded the first prize. A Silver Challenge Cup used to accompany this award, but two years ago Mr. Chandler won this outright, and last year he took 2nd place after Mr. W. Iggulden, of Frome. Mr. Chandler's varieties included F. S. Vallis, W. Jinks, Bessie Godfrey, Valerie Greenham, Mrs. E. Crossley, Henry Stowe, and Algernon Davis. The finest specimen plant in the exhibition was an example of F. S. Vallis, shown by Mr. L. SHEARMAN, of Undercliffe Cemetery. The Incurved varieties were not so strongly represented as the Japanese, but they were of exceptional quality.

One of the features of the show was the collection of single Chrysanthemums in vases. Mr. J. Howland (gr. to Mr. T. ARTON, Rawdon) carried off premier honours in the class for bouquets, and the most tasteful basket of Chrysanthemums was adjudged to be that of Mr. E. Mudgley (gr. to Mr. R. L. FOSTER, Queensbury). Mr. S. Nutter (gr. to Mr. W. BARRON, Bingley) obtained the 1st prize in the class for groups, and Mr. JOHN BROOKE, Bradford, was the winner in the class for baskets of autumn foliage. Only two exhibitors were seen in the group class. Mr. LEONARD SHEARMAN (Chrysanthemums) and Mr. R. EICHEL, of Bingley (miscellaneous plants), and their compositions were regarded as worthy of the 1st prizes in their respective classes.

BLACKBURN CHRYSANTHEMUM.

NOVEMBER 16, 17.—The 11th annual show of Chrysanthemums, Orchids, fruits, &c., promoted by the above society, was held in the Town Hall on these dates, and whilst there was a slight decrease in certain sections, on the whole the success gained in previous years was well maintained.

In the class open to growers within a radius of 18 miles around Blackburn for a group of Chrysanthemum plants, a silver challenge cup

was presented by Mr. J. Wilcock, J.P., Wilmar Lodge, Blackburn. This was won by Captain FIELDEN, Witton Park (gr. H. Boyd); 2nd, A. SHUTT, Mieus Road, Blackburn (gr. F. Watts); 3rd, T. MITCHELL-ECCLES, J.P., Quarry Bank, Blackburn (gr. John Pimlott).

In the cut bloom classes, that for 24 Japanese blooms in not fewer than 18 varieties, the 1st prize for which included the silver challenge cup presented by Mr. J. Rutherford, M.P., Blackburn, Mr. J. WILCOCK, J.P., Wilmar Lodge, Blackburn (gr. H. Bradburn), won.

Mr. J. WILCOCK, Wilmar Lodge, Blackburn, won in the class for 24 Chrysanthemum blooms, 12 Japanese and 12 Incurved (distinct varieties), for the silver challenge cup presented by Mr. Henry Lewis, Blackburn, for six Japanese blooms of a white variety, for six Japanese blooms of a yellow variety, and for six Japanese blooms of any other colour than white or yellow. Six Chrysanthemum blooms (Incurved): 1st, Mrs. JOHN TAYLOR. The best Japanese bloom in the show was F. S. Vallis, and the best Incurved bloom in the show was Mad. Fariet, both of which were shown by Mr. J. WILCOCK.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 19.—A meeting of the Executive Committee was held at Carr's Restaurant, Strand, on the above date, when Mr. T. Bevan presided.

After the minutes were disposed of the Chairman referred to the loss the society had sustained by the death of its treasurer, Mr. A. Taylor. A vote of condolence with the widow and family was passed unanimously. Pending the appointment of a new treasurer, it was resolved that the chairman be empowered to sign all cheques, the office not to be filled up until the next annual meeting.

Mr. Hawes and Mr. Moorman were appointed stewards to act at the forthcoming December show. It was resolved that the usual Floral Committee dinner take place at the end of the season. Ten ordinary members and one fellow were elected.

A meeting of the Floral Committee of this society was held on November 19, when the following varieties received First Class Certificates:—

Mrs. Thomas Fox (Single).—A very fine shade of yellow.

Mrs. Sidney Fox (Japanese) (see p. 360).—These two varieties were shown by Mrs. FAIRWEATHER, Bifrons, Canterbury.

Miss E. Partridge (Single).—Pink with a prominent yellow disc.

Merstham White (Single) (see p. 360).

Galatea (Single).—Pink with a white zone around the yellow disc.

Edith Harding (Single) (see p. 359).

Annie Hamilton (Japanese).—A large white flower with long narrow florets.

Mdlle. G. Ricol (Japanese) (see p. 360).—The last six varieties were from Messrs. W. WELLS & Co., Merstham, Surrey.

Distinction (Japanese).—A large incurving flower of a bronzy buff shade. Shown by Mr. H. J. JONES, Lewisham.

Crown of Gold (Single).—A deep bronze or old gold shaded flower, the florets of good substance. Shown by Mr. INGRAM, Weybridge.

Kathie (Single).—Bright reddish crimson. Shown by Messrs. J. PEED & Son, West Norwood.

H. Hann (Incurved) (see p. 360). Shown by Mr. SEWARD, Hanwell.

Obituary.

GREENWOOD PIM, ESQ., M.A., F.L.S., who passed away at his residence, Easton Lodge, Monkstown, co. Dublin, on November 14, was regarded as the best living authority in Ireland on fungi. The deceased gentleman, born at Monkstown in 1851, went through his collegiate course in Trinity College, Dublin, with distinction, graduating as gold medallist in natural science, and for many years was actively connected with scientific circles in Dublin; notably, as a member of the council of the Royal Irish Academy, the science section of the council of the Royal Dublin Society, and he was also on the council of the Royal Horticultural Society of Ireland. As a cultivator Mr. Pim's favourite flowers were Irises and Water Lilies, and a novel feature was to be found in his garden by the introduction of climbing and rambling Roses to the support afforded by Thorns and other trees. Mr. Pim was, probably, best known as a very successful amateur photographer and manipulator of lantern slides, his camera being chiefly devoted to plants. Mr. Pim was an occasional correspondent of this journal.

A. TAYLOR.—The respected treasurer of the National Chrysanthemum Society died suddenly on the 12th inst., after hurrying to catch a railway train. Mr. Taylor was an amateur cultivator and exhibitor of Chrysanthemums.

R. G. FLETCHER.—We regret also to learn of the death, on the 19th inst., of Mr. R. G. Fletcher, a well-known Orchidist at Mount Harry, Brighton.

ENQUIRIES AND REPLIES.

KEEPING FLOWER BEDS FREE FROM TREE ROOTS.—Has any reader had experience with creosote retuse for preventing tree roots from entering into flower beds near large trees? [What about the flower roots?] *W. H. C.*

ENQUIRY.—Will any reader be so good as to give full particulars as to Pineapple cultivation in the Azores; *i.e.*, the method of cultivation, temperature, varieties, number exported during the season, and the average prices realised. *Pineapple.*

ANSWERS TO CORRESPONDENTS.

ADDRESS: *J. McC.* We have no means of knowing the address of the lecturer. Write to the Secretary, Cheshire County Technical Education Committee, Chester.

APPLE TREES AND THE POLLINATION OF THE FLOWERS: *F. L.* Mixed planting is of the utmost importance. No one variety should be planted in extensive blocks. Bees would hardly answer the same purpose as mixing the varieties of trees, but we would recommend you to have the bees in addition to mixing your varieties. Mr. George Woodward, of the Barham Court Estate Gardens, Maidstone, has planted several varieties even in the same row, and the results have been most satisfactory. About one hundred of his trees represent the varieties. Cox's Orange Pippin, Stone's, Warner's King, Tower of Glams, Ecklinville Seedling, Lane's Prince Albert, and Golden Spire. You should plant about 20 trees of four varieties, selected from those already mentioned, and distribute them over the whole area to be planted.

CABBAGE LEAF-SPOT: *J. D. C.* This is caused by a fungus, Phyllosticta brassicæ, but it is not a serious disease. See Cooke's *Fungoid Pests*, p. 79.

CUSTARD APPLES: *J. S.* These are the fruits of a subtropical tree, Anona Cherimolia, found in the region of Ecuador and parts of Peru. The best varieties are almost seedless and are grafted on two year stocks raised from seeds. Oranges should be grafted in the early spring. See note on the Culture of Oranges at Sawbridgeworth in our issue for March 24, 1906, p. 187.

DRESSING FOR VINES: *J. F.* Take one part coal tar, nine parts clay, and two parts flowers of sulphur. Dry the clay and powder it so that it may be passed through a fine sieve. Mix these together adding sufficient boiling water to make it of the consistency of paint. Apply it to the vine rods by means of a partially worn-out paint-brush, stirring the mixture occasionally during the process of application. Your trouble being caused chiefly by mealy bug, you may elect to follow Mr. Newstead's recommendation and dress the rods with kerosene emulsion which he has stated in his book upon scale insects to be much more effective against this bug than any clay mixture.

ELECTRICITY IN PLANT CULTURE: *William Pettie.*—We can add nothing to what has already been published. See an article on the subject by Mr. B. H. Thwaite, in our issue for September 8, 1906, p. 180.

GABOON WOOD FOR PICTURE FRAMING: *C. P.* The wood is almost certainly that of a species of Diospyros, perhaps D. Dendo, but in the absence of leaves and flowers it is impossible to satisfactorily determine the species.

MAHONIA FRUITS: *S. A.* We do not think these can be poisonous.

NAMES OF FLOWERS AND FRUITS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *A. H.* 1, Well's Sweet; 2, Hollandbury.—*James Weaver.* [Please send us your address.] A poor specimen of Cox's Orange Pippin, a fairly good bearer in most seasons. Considering your several questions, we think Blenheim Pippin is the best variety.—*J. C. Wheeler.* Welford Park Nonsuch.—*E. P.* 1, Lady Henniker; 2, Queen Caroline; 3, Hanwell Souring; 4, King of the Pippins.—*Nocl.* 1, Newton Wonder; 2, Baumann's Red Winter Reinette; 3, Cellini; 4, Stirling Castle; 5, Gilliflower, not Cornish Gilliflower.—*Russet, Chichester.* 1, Cheshunt Pippin; 2, Lamb Abbey Pearmain; 3, Melon; 4, Old Nonsuch; 5, Winter Queening; 6, Waltham Abbey Seedling.—*Pinehurst.* 1, Nine Square Pippin; 2, not recognised, a local variety; 3, White Whorle.—*F. L.* 1, Is rightly named Derbyshire Crab. It was exhibited at the Apple Congress in 1884, and was then considered worthless. This would account for it not being found in any nurseryman's catalogue of fruits; 2, Newtown Pippin; 3, Lodgemore Nonpareil; 4, White Nonpareil.—*Ponica.* 1, Wadhurst Pippin; 2, Powell's Nonpareil; 3, Lord Derby; 4, French Crab; 5, Marie Louise; 7, British Queen. A "pot" is two bushels.—*F. S.* Winter Hawthornden.—*T. S.* Hambledon Deux Ans.

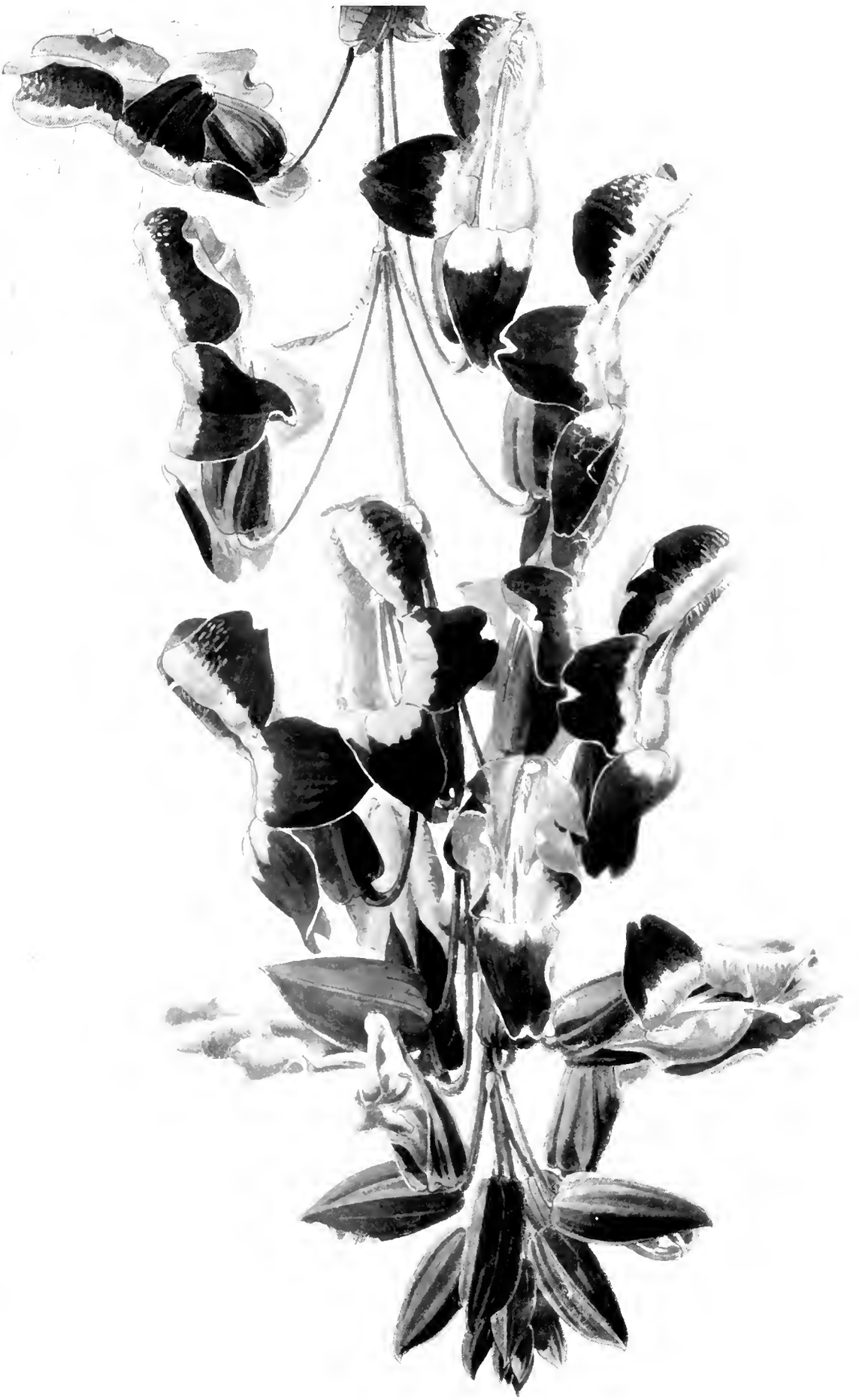
NAMES OF PLANTS: *W. G. S.* Eulophia pulchra.—*F. S.* Phlomis fruticosa.—*P. D. W.* Clematis brachiata. *J. S. C.* Pernettya mucronata—the white-fruited form.—*W. H. S.* 1, Canarina Campanula, a native of the Canary Isles; 2, Similax; 3, Muehlenbeckia complexa; 4, Gesnera tubiflora; 5, Asparagus plumosus.—*W. L.* Cypripedium Charlesworthii. We have seen a similar variety with enlarged and coloured lower sepals.—*C. E. A.* All ordinary varieties of Odontoglossum crispum as at present shown. The spotted one may develop better features.—*J. M. C. B.* Cymbidium ensifolium and Lycopodium dichotomum.

PSEUDOTSUGA DOUGLASII: *J. Stewart.* March is the best time to sow seeds of the Douglas Fir. They may be sown in drills, or broadcast on beds slightly raised in the open air and covered with fine soil. No protection is necessary unless the position selected is very cold and draughty, in which case a board, rising 4 inches to 6 inches above the ground level, may be placed round the bed.

TENANCY: *J. A.* Your better plan will be to consult a solicitor. See articles on the subject in our issue for October 27, and the two following numbers.

TOMATO ROOTS: *B. T. A.* The nodules on the roots are caused by eelworms. Clear out the old soil in which the plants have been grown, and sterilise it by baking, or convey it to a distant part of the garden and bury it. Thoroughly cleanse the house in which they have been grown, with carbolic acid in warm water, and spray the soil with a rose-red solution of permanganate of potash (Condy's fluid). Dress the land intended for pasture with bone manure or some other phosphatic fertiliser.

COMMUNICATIONS RECEIVED.—H. J. E.—Mrs. F. C. C.—W. J. T.—H. E. S., Guernsey, with thanks—T. C.—F. M.—Dr. K., Berlin—F. R. B.—L. A.—G. M.—C. E. P.—H. M. W.—J. R. T.—A. D.—C. H.—J. B. D.—R. C.—H. R.—C. T. D.—D. R. W.—W. J. P.—W. H.—H. M. V.—A. H. (next week). Two shillings have in accordance with your wish been placed in R.G.O.F. box)—M. Dujardin, Paris—H. F. McM. (the article has not arrived)—A. G. S., Auckland—E. J.—T. B.—J. S.—F. P.—W. D.—D. R.—J. C. W.—W. D. & Sons—Exon—G. B., Ireland—E. C.—T. D.—W. K.—T. H.—Gip—S. J. Warren—W. W. R. & Co.—Forfarshire—W. N. R.—H. H.—W. B.—A. H.—W. R. C.—Constant Reader—H. J. P.—H. R.—J. R. J.—S. A.—C. H. P.—L. H. J.



THUNBERGIA (HEXACENTRIS) MYSORENSIS, A STOVE CLIMBING PLANT; COLOUR OF FLOWERS PURPLE AND YELLOW.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle
No. 1,040.—SATURDAY, December 1, 1906.

CONTENTS.

ILLUSTRATIONS.

THE AURICULA IN WINTER.

AT certain seasons of the year even enthusiastic amateurs become to a limited extent rather careless of their favourite plants, and I fear this applies as much to the Auricula as to any other plant. Autumn, about the time of the fall of the leaf, when

"Boughs are daily rifted by the gusty thieves,
And the book of nature getteth short of leaves,"

is also the time of the year when there is fear of the Auricula being forgotten. The choice Alpine varieties in the open border become covered with drifted wet leaves, at a time when the plants themselves are rapidly losing their outer leaves. The drifted leaves are the best shelter for enemies of the plants, such as slugs and the leather-coated grubs, for they can feast on the succulent young leaves of the plants unperceived. Amateurs who value their Auriculas should see to it that not only are the leaves that have drifted round the plants removed, but all dead and decaying Auricula leaves also, and these should be carefully detached at their base, for if portions of decayed leaves are left they may cause decay. Some persons, amongst them gardeners of much experience, advise leaving such leaves as have fallen from trees and accumulated around plants, as they protect the plants from frost. My own experience is that it is a haphazard and uncertain kind of protection for most garden plants, and cannot be tolerated by Auriculas.

Auriculas of the Alpine section are being more extensively cultivated as garden plants, and they are exceedingly interesting and have a charming effect if planted in groups in the front row of a border of herbaceous plants or in a well-placed part of the rock garden. Three or even as many as a dozen plants of one variety may be made to form a group, and they will be capable of increasing in size and profusion of bloom year by year if a slight surface dressing of a compost of equal parts decayed manure and loam is placed around them in March each season. They do not thrive so well in light sandy soil, preferring rather an unctuous loam having some holding capacity; in the case of light shallow soils it is better to dig out a few spadefuls and replace this with a compost of decayed, turfy, yellow loam, to which may be added a fourth part of decayed manure. This can be obtained easily in most gardens, as there is, or ought to be, a constant supply of it in every potting shed. A little sand and leaf-mould may be added if the loam is very clayey or "heavy," as such is apt to tear open in cracks during dry summer weather, damaging the roots of the plants and otherwise injuring them. I am sure no amateur will think these minor details superfluous, and I am always in a mood to impress upon young gardeners the great importance of minor details in the cultivation of plants. Every successful cultivator will bear me out in the assertion that no success worth the name was ever obtained except by careful attention to all these minute details. There must also be a love for the work, and on this point I may have the Editor's permission to quote from Ruskin: "When you are fairly at work, what is the motive that tells upon every touch of it? If being a landscape painter, it is love of trees and hills that moves you; if, being a figure painter, it is love of human beauty and human soul that moves you; if, being a flower or animal painter, it is love and wonder and delight in petal and in limb that moves you, then the spirit is upon you, and the earth is yours and the fulness thereof. But it, on the other hand, it is petty self-complacency in your own skill, trust in precepts and laws, hope for academical or popular approbation, or avarice of wealth it is quite possible that by steady industry, or even by fortunate chance, you may win the applause, the position, the fortune you desire; but one touch of true art you will never lay on canvas or on stone as long as you live."

Let young gardeners ponder these words. They must have a love for their work; and in truth I do not know any work that appeals to the affections so much as does gardening and the culture of lovely flowers.

Besides the Auriculas which are cultivated in the open garden there are those in pots and frames requiring attention; these appeal in the greater measure to the fancier. He cannot trust his choicest favourites to the storms of winter. They are protected in glass frames during that inclement season, but even so they demand careful attention. The outer leaves decay quite as freely on the plants under glass as on those in the open border. The rain has been falling freely lately, the ground is sodden all round the frames, and no ray of sunshine has been visible for some time. Under conditions such as these there is much danger of the plants decaying at the neck or in the centre, and if decay once sets in there is little chance of saving the plant, and none of its ever forming a good specimen.

During the autumn trusses of bloom are thrown up, and an inexperienced cultivator may break off the succulent stem in order that the autumn bloom may not exhaust the plant and prevent it from developing a good truss of bloom next year. Probably the part of the stem left may immediately decay, and in this state it cannot be removed at the base, and may rot down and so destroy the plant. The flower-buds only should be removed, and in this state the stem will remain green until it gradually dries up and can readily be pulled out. Plenty of ventilation is needed during late autumn and winter, as the plants are in their resting period; the lights may be drawn off whenever the weather is favourable, and as the outer leaves decay they should be removed. It is recommended that the frames containing the plants be placed in a light and moderately exposed position. The plants require very little water at this season, but it is a grave error to allow the soil to become dusty dry. I am often asked—"How often should the plants be watered? To such a question as this it is impossible to give a direct reply. At present the plants may need water once in a week or once in 10 or 12 days. I can only advise that the soil should be kept well on the dry side, and when watering is necessary that it should be done early in the day.

The culture of the Auricula was perhaps better understood amongst amateurs 50 years ago than it is now, except that the growers at that day recommended the use of an over-rich compost, which gave a richness of colour to the foliage for the time, but which caused the old plants to die afterwards, although they would certainly be replaced by off-sets. We have also a very much better selection of varieties now than was possible then. There are some who fancy that the old varieties of 50 years ago were of superior merit; but from the point of view of the old florists, and their standard of excellence, which is still retained in the Royal Horticultural Society's "Rules for Judging," the modern flowers excel on all points. There is an excellent paper in *The Floricultural Cabinet*, October, 1855, headed "Remarks on the Auricula bloom of 1855." The varieties are very numerous, and as they were the best in existence at the time they would be esteemed accordingly. There are 15 green-edged varieties described, most of them severely criticised. Leigh's Colonel Taylor was stated to be the best. I still grow it, but it is never good enough to exhibit as a green edge: the pips are angular and the paste thin. Page's Champion and Booth's Freedom were also stated to be very fine. I have grown both, but they have now disappeared from my collection. There were 14 grey-edged varieties, but Lancashire Hero and Ringleader are the only two that are now in cultivation. They are both good when in their best dress.

George Lightbody was in cultivation at the time, but the writer did not mention it. When well grown it is still the best grey-edged Auricula. In white-edged varieties 13 were described, and I still cultivate two of them, True Briton and Favourite (Taylor's), but they do not find a place in the best collections.

Of "selfs" there were 15 varieties, but they have all been dropped except Othello. In Alpines it was stated that there had been no improvement for many years: Conspicua, Fair Rosamond, and Victoria are all the writer could name, and they do not admit of comparison with modern varieties.

Of the true green-edged varieties, the best six now in cultivation are: Abbe Liszt, Abraham Barker, Dr. Hardy, Mrs. Henwood, Rev. F. D. Horner, and Shirley Hibberd.

Grey edges.—George Rudd, George Lightbody, Lancashire Hero, Marmion, Mabel and Richard Headley.

White edges.—Acme, Conservative, Mrs. Dodwell, Heather Bell, Rachel, and Wild Swan.

Selfs.—Black Bess, Gerald, Favourite, Mrs. Potts, Heroine, and Ruby.

Alpine Auriculas.—Dean Hole, Duke of York, Firefly, Ganymede, General Buller, J. F. Kew, Melanie, Mrs. Harry Turner, Mrs. Martin Smith, Rosy Morn, The Bride, Teviot Dale, Thetis, Uranie, and Ziska.

There are many others which have been exhibited and obtained Awards of Merit and First-Class Certificates from various societies National and Royal. Some of them may be superior to those I have named, and some probably are of uncertain merit, and will not maintain their first promise. It is of little use giving the names of varieties of Auriculas until they can be obtained through the usual trade channels. *J. Douglas.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM INSIGNE SANDERÆ AT WILDERSPOOL

OUR correspondent, Mr. de Barri Crawshay, in his descriptive note on p. 317, respecting Mr. William Bolton's Orchids at Wilderspool, near Warrington, referred to Cypripedium insigne Sanderæ as being in extraordinary vigour, and said that the plants grew like Tradescantia under a damp stage. He also said the house containing 500 of these plants must be an extraordinary sight when in flower. At fig. 141 we reproduce a photograph of the plants taken since Mr. Crawshay's note was penned, from which it will be clearly seen that his prediction has been fully justified.

ODONTOGLOSSUM LONDESBOROUGHIANUM

FLOWERS of this very distinct species are sent by Mr. H. Haddon, gr. to J. J. Neale, Esq., Lanwood, Penarth. O. Londesboroughianum was first imported from Mexico, and flowered with Lord Londesborough in 1876. In habit and in the bright yellow of its flowers it more nearly resembles an Oncidium than an Odontoglossum, in which genus O. Cervantesii is the nearest. It has creeping rhizomes, with pseudo-bulbs at intervals of 2 to 3 inches. The scapes are ascending, and often over 2 feet in length, the upper third bearing showy flowers, the nearly equal sepals and petals being yellow, closely lined with bars of chocolate-brown colour. The lip has a broad reniform blade of a bright yellow tint, the base having a few reddish spots.

Few plants have troubled gardeners to grow successfully more than this, and the cultural note which Mr. Haddon sends may be useful to some. He writes: "The plant of Odontoglossum Londesboroughianum has a spike of 18 flowers. It has been growing in a basket hanging from the roof of the cool, intermediate house quite close to a ventilator, which has been open night and day during summer. I also left a pane of glass on each side of the ridge above it almost unshaded, the middles of the panes being but slightly dulled. I gave the plant plenty of water during its season of growth, and syringed it in the morning and afternoon of bright days. Last autumn I watered it freely until the leaves turned yellow and dropped off, after which it had a long rest, without any water whatever, and the pseudo-bulbs kept quite plump until growth began again and water was given." This note gives the two points, the neglect of the observance of which generally result in failure, viz., the keeping of the plant in a well-ventilated situation, and the withholding of water after the leaves turn yellow and drop off, which is a sure indication that active growth is completed and a dry rest required.

CATTLEYA LABIATA, PELORIATE.

A THREE-FLOWERED inflorescence of a very effective abnormal form of Cattleya labiata is sent me by Mr. Richard Nisbet, Byrkley Gardens, Burton-on-Trent. The flowers were of the usual colour, but the upper sepals are petaloid, wavy at the edge, broad and slightly stalked. The petals are scarcely wider than the sepals, and there are three lips, the middle one being normal and the two lateral ones made up of the sepals with half a labellum added to each, the upper side being expanded and crimped, as is the normal labellum, and with a similar yellow base, and the lower half formed like the true sepal. The column, which is in the middle, is of the usual form and not straightened as is frequently the case in abnormal flowers of this class.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDEES.

WITH an apology for its lateness the August issue of this useful work came to hand, descriptions and coloured illustrations of the following plants being given:—

Cattleya lueddemanniana.—An interesting hybrid raised by M. Peeters, of Brussels, between C. Bowringiana and C. Schilleriana, the latter species, as in all cases where it has been used, showing strongly in the form of the flowers, which are dark reddish-purple, with a yellow disc to the lip.

Cypripedium Mme. Blanche (bellatulum × barbatum) Peeters. The flowers are white, with a yellow tint in the middle of the dorsal sepal, petals and lip. The dorsal sepal is tinged and striped with purple, the petals being spotted with the same colour.

Cypripedium Phœbe (spicerianum × bellatulum). The flowers are white, tinged with green, the dorsal sepals and petals bearing dotted purple lines, the lip being tinged with purple. Both these Cypripediums were illustrated from M. Peeters' specimens.

Cymbidium insigne Sanderi.—The pretty species introduced from Annam, and illustrated in the *Gardeners' Chronicle* (February 25, 1905, page 115). Flowers white, tinged and striped with rose colour.

Dendrobium cupidatum.—The pretty old species, with rose-tinted flowers, the greater part of the lip being yellow, and which first flowered in the Westonbirt collection in 1850.

Dendrobium Ainsworthii.—Habit of D. macrophyllum. The flowers are white, with a tinge of yellow on the sepals and lip, which has purple markings in the centre. An illustration and description were given in the *Gardeners' Chronicle* for February 9, 1901, page 86. The plant now figured bloomed with Baron von Furstenberg.

Epidendrum glumibracteatum.—Allied to E. clavatum, *Bot. Reg.*, t. 1870. The flower-stalk and ovary are 2 inches in length, bracts half as long, sepals and petals green, lip white. Flowered by Baron von Furstenburg, and identified at Kew.

Eulophia Guineensis var. purpurata.—A pretty variety from the Congo, with rose-tinted flowers.

Lælia majalis.—The well-known rose-coloured Mexican species. Flowered with M. Van de Putte, Melrelbeke-Gand.

Listrostachys pelucida.—The West African species usually called Angræcum pellucidum in gardens. The flowers are produced in pendent racemes. They are nearly white at first, and changing to the tawny hue shown in the illustration. Flowered by Baron von Furstenburg.

Odontoglossum Insleayi.—Introduced by the late Mr. Barker, of Birmingham, in 1838, through Ross, who collected for him in Mexico, and since that time it has been a very familiar species in gardens.

Odontoglossum Lambeauianum ×.—The fine hybrid raised by M. A. A. Peeters between O. crispum var. and O. Rolfeæ ardentissimum, two varieties of which were illustrated in the *Gardeners' Chronicle* in 1905 (November 4, page 324, and December 23, page 434, var. exquisitum). It is one of the best hybrid Odontoglossums. The flowers are white, tinged with purple, and heavily blotched with dark purplish-red.

Oncidium suave.—A very old Mexican species, with brown sepals and petals tipped with yellow, and yellow lip with reddish crest.

The Chronique Orchidéenne, which accompanies the illustrations, publishes a report of the Orchid meeting in the Brussels Botanic Gardens on July 15, including the Odontoglossum caligiosum, shown at the Royal Horticultural Society on July 17 last, and reported in the *Gardeners' Chronicle* (July 21, page 56), the parentage being recorded as O. Weltoni × O. Pescatorei. Oncidium Weltoni is an obsolete synonym of Miltonia Warscewiczii, and when the plant was shown at the Royal Horticultural Society the exhibitor suggested the parentage Miltonia Warscewiczii × Odontoglossum Pescatorei. But the test of the R.H.S. paintings was applied, and it was found to be almost identical with a variety of Odontoglossum Vuylstekei. The exhibitor then entered the plant as O. caligiosum (cristatum × Pescatorei).

Oncidium Carthagmense album was also shown at the Royal Horticultural Society, but the honorary secretary pronounced it to have no affinity with O. carthaginense, but was in fact O. stramineum Lindl. (*Bot. Reg.*, 1840, t. 11; *Bot. Mag.*, t. 6254), which was one of the first Orchids collected by Hartweg for the Royal Horticultural Society in Mexico in 1837. It is a pretty species, which would probably be more successfully grown in gardens if cultivated in a cool house. *J. O'B.*

POLYGALA MYRTIFOLIA VAR. GRANDIFLORA.

THERE was published in the *Die Garten Welt* for September 29 a note on the genus Polygala from the pen of Mr. H. Riebe, of the Royal Gardens, Kew, together with an illustration of a plant of the above species, grown as a standard at Kew. The species is a native of South Africa, and is one of the most beautiful of the genus, the plant reaching a height of 4 to 6 feet. The plant reached Kew under the name of P. grandiflora, and it is cultivated there as a half standard, in which form its good appearance is increased. The plant flowers in the months of April and May. The flowers are of a bright violet tint, darker as regards the keel, and these appear in short clusters at the extremities of the shoots, although in consequence of the simultaneous growth of the new shoots they do not appear so to do. Leaves light green in colour, with very short stalks, and longish, oval. *E. M.*

THE ROSARY.

BUD GRAFTING INSTEAD OF BUDDING OF ROSES.

WHEN one considers that the sap does not rise in the bark or rind of the stem, as has been erroneously supposed, but in the wood just beneath it, and that in bud-grafting the eye or bud comes into direct contact with the wood, it is readily understood why bud-grafting is so successful in most instances; the losses do not amount to more than 5 per cent. The operation is more quickly carried out than budding; the bud runs no risk of injury as by pushing it into place in budding. In the case of failures, there are no ugly scars and every stem can be grafted, whether the bark will "run" or not. The operation consists in making a slanting incision in the stem or branch, and then with a second cut removing the rind and a very little of the wood. In this cut the bud is placed, after cutting to fit it exactly. That done, another cut can be made on the opposite side of the stem, and a second bud inserted at the same height. Both buds are now bound in with bast or worsted, beginning at the bottom, the short end laid on the stem or shoot, and the longer end used to encircle the buds, binding fairly tightly immediately below and above the bud. The buds being now bound in, the short end and the longer remaining end of the bast can be tied in a knot. This kind of Rose grafting is making its way, and taking the place of budding in many parts of the continent, even among old Rose cultivators. *F. M.*

AN ITALIAN GARDENER'S MODE OF STRIKING CUTTINGS OF ROSES.

A USEFUL note on the above subject is supplied by Herrn Karl Mader, director of the Agricultural School at St. Michele, in the Tyrol. In the course of a student's journey to Piedmont the gardens of Carboni Giovanni that are situated in the vicinity of Alba were visited. The gardener at this establishment directed the attention of his visitors to his method of propagating Roses that are not readily rooted by any other means. In the month of July, tin funnel-shaped cases of small size are slipped over selected shoots, after first ringing the rind at the point from which roots are desired, the cases being then filled with soil mixed with moss, which mixture is kept in a moist state. The method in principle is the same as that which gardeners adopt with Dracænas, Crotons, &c. A callus soon forms and roots follow, the cutting being ready to plant out or place in a pot in the month of September. *Oesterreichische Gart a Zeitung.*

CULTURAL NOTES FOR DECEMBER.

ALL arrears of planting should now be brought to a close, providing the ground is in a fit state. In town and suburban gardens, where smoke and fogs prevail, the planting can be left until March, which will be just before vegetation becomes active again. Standard Briars recently planted should be carefully examined, and if any are loose in the soil the soil should be well trodden about their roots. All standard Briars should, if possible, be planted before Christmas, and the surface of the ground about them be well mulched, for if they are planted before the New Year commences fewer are lost than when planted in the spring. The Manetti, Seedling Briar, and Multiflora stocks can, if other work is pressing, be "heeled in" carefully and be planted during the spring, as, having many fibrous roots, there is not much risk of their failure. All classes of Roses may still be planted with the exception of the tender kinds of Noisettes, Teas, hybrid Teas, and Chinas; but in planting all Roses the nature of the soil and the climate of the district must be taken into account. Established ground plants, with much crowded head growths, should have a portion of the current year's wood well thinned out to the old wood. This admits light and air to the tree without impairing its vitality. This rule will apply to most of the hardy climbers, including hardy perennials, hardy Chinas, and ramblers. The remainder of the established pot Roses outside that have finished flowering can now be brought under glass and be kept under cool conditions and rather dry at their roots for another month, but soon after Christmas they should be re-potted. The plants that were potted in October will now be best placed under cover, either in a cold frame or in a light, well-ventilated house. A portion of the batch can now be pruned, the stronger growing varieties to about a third, and the weaker to about half of the current year's growth. Always prune to an outward pointing, but to keep the middle of the plant as open as is possible and to prevent a crowded central growth of shoots. It is not too late, providing the wood is well ripened and the buds are dormant, to plant some more cuttings outside in the same manner as advised for October, choosing moderately strong growths from about 8 inches in length. Although rather late in the season, 35 to 40 per cent. of the cuttings of the hardier kinds can be depended upon to root. Cuttings of the Manetti, de la Grifferaie, and Briar stocks can still be planted, with a fair measure of success in rooting, especially if the weather remains mild. All materials for protection, such as straw and dried fern, should be in readiness, so that if sharp weather prevails, they will be ready for protecting the "head" of the tree which may be done by affording a loose covering of the material and by placing some over the soil about the roots. Plants on walls can be protected by a mat or two nailed to the wall; especially should this protection be afforded to tender varieties. *J. Z. G.*

FIG. 141.—CYPRIPEDIUM INSIGNE SANDERÆ FLOWERING IN MR. BOLTON'S COLLECTION.

(For text see page 366.)

NOTICES OF BOOKS.

TEXT-BOOK OF FUNGI. By George Massee. (Duckworth & Co.)

The portly text-book of Botany which served past generations of students, is now rapidly giving place to a series of smaller works each devoted to some special branch. The "Text-Book of Fungi" will fill a gap in the series, and is therefore welcome. The translation of De Bary's "Anatomy and Biology of the Fungi" has hitherto been the principal work in English, but it has never been a popular book for earlier studies. This new "Text-Book" is in part a re-statement of old facts, but the author has woven into it the results of his own active labours as an investigator, as well as all the prominent discoveries of recent years by other workers. It was no light task to select the best out of the enormous literature dealing with the fungi, but Mr. Massee has succeeded in producing a book of a size and price (6s.) within reach of all, and which, at the same time, gives a clear, concise, and orderly account of all the aspects of fungus-life. The "Text-Book" is divided into three sections, the first dealing with form, structure, and life-history, the second with pathology, and the third with the classification of the fungi. The book is not intended to include a complete description and the method of identifying all species of fungi native to Britain; for that branch Mr. Massee has already written a most useful "British Fungus Flora." Nor do plant-diseases and their cure fall within the scope of this book, although it contains a considerable amount of general information on this topic. Confusion may be avoided by pointing out that the "Text-Book of Fungi" is distinct from the "Text-Book of Plant-Diseases" published by Mr. Massee in 1899, the two books are companion volumes issued by the same publisher.

The introduction reveals the fact that the author is disturbed by certain "cytologists" who have recently invaded the domain of fungi in a somewhat noisy manner. Mr. Massee has been led to defend the labours of the systematist, but this is surely unnecessary, for the first essential in the study of plants is to have careful descriptions of their characters, and as much information as possible regarding their habitat; the number of new fungi which are still being discovered in Britain is a sure sign that good systematists are essential.

The morphology, physiology, and biology of the fungi are dealt with in chapters relating to the cell, anatomy, &c., a method which greatly facilitates reference. A list of papers utilised by the author is given at the end of each division, and these lists will serve as a useful guide to the literature, although they are by no means exhaustive. The great advance of knowledge regarding the minute structure of the fungi is evident on comparing this, the latest book, with De Bary's work. Some statements are, however, made in a way likely to cause confusion, one sentence which purports to explain the turgidity of the cell (p. 19) is a case in point. It is to be regretted that in dealing with the formation of spores and modes of reproduction, the author has not used a more exact nomenclature as regards the terms "spores" and "conidia"; for example, "the conidiophore consists of a single, erect, non-septate hypha, bearing a single sporangium at its apex." The word "gonidia," used by many English writers, is, so far as we can see, not once used in the book; if the author prefers "conidia," a statement to this effect with a reference in the index would save confusion to the student accustomed to the earlier term. It is quite true that Brefeld, one great authority, differs in his use of the word spore from those who regard the spore as the product of the sexual generation, and it is not easy for an author to pronounce an opinion. Yet one essential of a "Text-Book" is clearness, and a definite English standard of nomenclature would find many followers.

The excellent account of recent work on sexual reproduction of the fungi is opportune at the present time, and the summaries on methods of spore and conidial dispersal are so interesting that one feels tempted to wish the author had made them longer. The divisions which deal with the mineral food of fungi, the effect of light, temperature, and other agents, the colours and chemistry of the fungi, and other topics appear at first sight fragmentary, but the fault is not the author's, for his summaries give about as much information as is known at the present time.

The biologic forms of fungi are explained in a clear manner, especially the work in this direction done by Mr. E. S. Salmon. "Personal Views on Phylogeny" is a statement of the author's views on a complex problem; the argument is not altogether convincing, the sequence is indifferently expressed, and altogether it is rather difficult to ascertain what the author's views really are.

The section of the book on Pathology gives a brief account of the evolution of parasitism amongst fungi, and of the effects on the plants attacked. The origin of Potato disease from diseased tubers is an important topic dealt with at some length, and one on which Mr. Massee has recently conducted interesting investigations. An article on Legislation and Disease is given, which originally appeared in the *Gardeners' Chronicle* (December, 1905, and January, 1906).

The section devoted to classification of fungi is the best in this book. A preliminary table shows the systematic arrangement in a way which is easily grasped. Keys are supplied for distinguishing the chief genera of each order, sub-order, and, in some cases, the family. The short, concise descriptions of important fungi are excellent, and in many cases are accompanied by illustrations. The numerous figures are a feature of this book, and will be appreciated by all readers. The book nominally has 141 "figures," but the actual number of illustrations is much larger, since many of the figures are plates with as many as eight or ten separate drawings. Several photographs have been reproduced with success. The majority of the illustrations are reprints from the "Text-Book of Diseases," and two plates from that book showing *Sclerotinia* are included, although the genus finds no place in the classification given. Thirty-five illustrations are repeated, and in one case (Figs. 6 and 87) two different synonyms of *Tilletia tritici* are used. In the text we also notice that the Potato disease is placed in the genus *Phytophthora* in one place, and in *Phomopsis* in another. Several printer's errors were noticed; for example: "conidia . . . germinate once" (p. 103) should surely be "at once"; there is a misspelling in the title near foot of p. 51 (azygospore is meant).

Oversights of this kind are almost inevitable in the first edition of a book, but that the "Text-Book of Fungi" will live through many editions we may confidently forecast.

The "Text-Book of Fungi" is an important addition to our literature, and it ought to find a place on the shelves not merely of the fungologist, but also of everyone who studies botany. Students preparing for the National Diploma for Agriculture or university examinations will find the book especially useful and up-to-date in those general principles, which it is so important they should grasp clearly.

A CONCISE HANDBOOK OF GARDEN SHRUBS. By H. M. Gwyn Lewis. (Methuen & Co., 3s. 6d. net.)

This is an alphabetical list of hardy and half-hardy shrubs that are grown in British gardens, with occasional cultural details. Trees like the Ailanthus and the Tulip tree are included as well as shrubs, to which we should raise no objection, but we are puzzled when we find Abutilon vitifolium described as a climber suitable for walls, and not to be regarded as hardy anywhere. We saw a big bush of it lately in Dover, where it is grown in the open without protection. We are surprised also to find Aristolochia elegans included among hardy garden shrubs. In spite of a few eccentricities of this kind, and the omission of some of the newest introductions, such as Davidia and Olearia Gunniana, this is a useful little book to be commended to growers of shrubs, the more so as it comprises a copious index, and for a book of this kind it is very free from errors. The exceedingly brilliant autumnal colouration of Pyrus arbutifolia should have been mentioned.

IRISH GARDENS.

(Concluded from page 352.)

DARREEN.

This is the Irish home of the Marquis of Lansdowne, who adds to his great political reputation that of being a keen amateur gardener and an excellent landlord. His garden of some 30 acres is on the south side of Kenmare River, and here, as in other gardens that we saw, the conditions favour the cultivation in the open air of what are known as sub-tropical plants. The most striking features of the garden are magnificent masses of Indian Bamboos and gigantic coniferous trees. I have never seen Abies Nordmanniana so perfect and luxuriant as at Darreen. Gaultheria Shallon was 8 feet high, Griselinia littoralis planted in 1882 was 30 feet high, Veronica Traversii 15 feet, Acacia dealbata 50 feet, Eucalyptus Globulus 80 feet, Azara microphylla 25 feet, Olearia Forsteri 20 feet by 20 feet, Euphorbia mellifera 10 feet through, Erica arborea 10 feet, Myrtus Luma 20 feet, Ilex crenata 15 feet by 15 feet, Leptospermum lanigerum 15 feet; enormous plants of Cordyline, one measured had a stem 3 feet in circumference; Kalmias like Portugal laurels; Leptospermums like Privets; Metake Bamboo 12 feet high, and Falconer's Bamboo 25 feet high, 40 feet spread, with 1,000 canes, all in flower—a marvellous sight.

ROSSDOHAN.

This is also on Kenmare River, and is the property of Dr. Heard. It is practically an island, and some 20 years ago was almost waste land, with scarcely a tree upon it. By planting first shelter trees and then many kinds of Australian, New Zealand, Himalayan, and Californian trees and shrubs it has been turned into a jungle of exotic vegetation. Simon's Bamboo 15 yards across, Aralia Maximowiczii 20 feet high, Acacia decurrens 30 feet, A. melanoxylon 20 feet, A. falcata 30 feet, Eucalyptus urnigera 40 feet, Olea europæa 15 feet, Melaleuca hypericifolia 10 feet, Cassinia longifolia 15 feet, Hakea saligna with a 12-inch stem, Agonis marginata, great shrubs; Brugmansia sanguinea, Pittosporums, Escallonias, Kunzeas, Ozothamnus, Callistemons, Boronias, Camellias, Daphne indica and Asparagus plumosus. These are a few of the plants noted as being successes in Dr. Heard's garden. It is clear that, with shelter from the strong sea winds, a very large number of plants from sub-tropical regions may be grown on the south-west side of Ireland. We were unable to get to the garden of Lord Dunraven, at Garrish, but we were informed that it is of similar character to those of Lord Lansdowne and Dr. Heard.

FOTA.

This, the seat of Lord Barrymore, is famous for its garden, the noblest in Ireland, and one of the most delightful in the world. I saw it 15 years ago, and was astonished by the change that had taken place in so short a time. Truly, plants grow rampantly in Ireland. Fota is a place of trees, especially Conifers. An evergreen Oak, with a trunk nearly 7 feet through, a cork-barked Tulip-tree, and groves of Cordyline and Yucca gloriosa near the entrance give the

note for the whole place. All Falconer's Bamboos have flowered, and there are hundreds here, the children of those which flowered at Fota 30 years ago. A list of the big trees in this garden would be longer than space will permit. The special things that may be mentioned are Fagus Cunninghamii, 50 feet; Embothrium coccineum, 30 feet by 30 feet; Benthamia fragifera, 40 feet by 50 feet; Berberis nepalensis, 12 feet by 20 feet; Pittosporum Mayi, 40 feet; Ilex latifolia, 40 feet; Genista racemosa, 12 feet; Eriobotrya japonica, a grand old tree; Acacia dealbata, a tree; Clianthus puniceus, 30 feet through; Dasylirion longifolium; Asparagus retrofractus, a great mass against a wall; Phœnix senegalensis, two big specimens outside for 12 years. The great trees of Pinus Ayacahuite, P. insignis, P. Montezumæ, Picea Morinda, P. Alcockiana, Abies grandis, A. numidica, A. bracteata, A. religiosa, A. Webbiana, A. cephalonica, Tsuga Brunoniana, and Cryptomeria are grand to see, and the groves of Bamboos, Phormiums, Cordylines, Chamærops, Aralias, &c., are noble. Water gardening is a special feature, and in swampy situations there are many kinds of flowering and foliage plants that love moisture.

BELGROVE.

A few miles from Fota is Mr. Gumbleton's garden, the home of many rare and interesting plants, the proprietor being a very keen collector and tester of plants of all kinds. Mr. Gumbleton knows more about garden-plants than any amateur that I have ever met, and his knowledge has full play in his own garden. We were unfortunate in having to see the garden on a pouring wet day. Some of the plants noted were Anemone Fanninii, a mass 6 feet through, the peltate leaves 2 feet high and 15 inches across, and the scape 6 feet: I had never seen this plant so good, although Kew introduced it about 15 years ago. Olearia insignis against a wall bore nine flowers; Freylinia cestroides, 10 feet; Daphniphyllum glaucescens, 18 feet by 18 feet; Pterostyrax hispida, a tree draped with its lovely white flowers; Plagianthus Lyallii, Xanthoceras sorbifolia, Buddleia Colvillei, Eucryphia pinnatifolia, E. cordata, Romneya Coulteri, Escallonia langleyensis ×, Veronica Hectori, and V. Lindsayi were seen in fine condition. Mr. Gumbleton also makes a speciality of Begonias, Pelargoniums, Disas, and, of course, herbaceous plants.

ST. ANNS.

The stately home of Lord Ardilaun is more like an English nobleman's residence than any that I saw in Ireland; and this is true of the garden also. The keep of the place is good, the collections of plants are comprehensive and well cared for, and there is an air of cultivation wherever one looks. Lady Ardilaun is a keen gardener, and loves to experiment with plants of doubtful hardiness, providing shelter fences and hurdles for those supposed to need it until they are well established. Buddleia Colvillei, a bush 12 feet high, was in flower; also big bushes of Cassia corymbosa, Carpenteria californica, and Pentstemon coccineum. Roses and Carnations are splendidly grown there.

ASHBOURNE.

Mr. Beamish has formed here a delightful garden, which in a few years will most likely be much talked about. It is partly on a steep slope, with the bare rocks showing here and there, a situation that lends itself to rock gardening, and Mr. Beamish has made the most of it. The whole garden is well conceived, and the construction of the rockery is most picturesque. Plants grow exceptionally well there, and, as the proprietor spares neither money nor pains to secure the best, his garden is sure to prosper.—*W. Watson, in Kew Bulletin, 1906.*

A MODEL BOTHY.

FIG. 142 represents a view of the new bothy recently constructed in the Rt. Hon. Lord Rothschild's gardens at Tring Park, Tring. It is a very ornamental structure, and the timber from which the massive Oak pillars and other heavy woodwork in the front was fashioned, was furnished by trees grown at Tring. On the ground floor is a spacious kitchen fitted with all necessary appliances on a very liberal scale; a large and airy dining-room, a fine sitting-room and reading-room [which are both very comfortably carpeted and furnished], and lavatories and storage accommodation. On the upper floor a corridor runs from end to end of the building, with lavatories and bath-rooms at either end. Ten spacious bed-rooms are provided, and at one end, quite shut off from the rest of the building, and with a separate entrance, is an isolation sick-ward with bed accommodation, nurse's quarters, bath-room, &c. The whole building is lighted by electric light and is heated by the large Treatham boilers recently erected, which also heats the whole of the plant houses and offices. In addition to the comforts supplied in the building itself, the young men have free use of perhaps the finest private horticultural and botanical library in existence, and which the Hon. Walter Rothschild has had arranged near to the bothy.

FIG. 142.—THE NEW BOTHY AT TRING PARK GARDENS.

THE BOARD OF AGRICULTURE AND THE AMERICAN GOOSEBERRY-MILDEW.

In recent numbers of this journal* I have drawn attention to the imminent danger of the introduction into England of a very destructive fungus disease of Gooseberries, viz., the American Gooseberry-mildew. I have so recently described the serious nature of this disease that it is not necessary to deal with this point; it may be just mentioned here that it is solely on account of the ravages caused by this mildew that growers in the United States have been forced to abandon the cultivation on a commercial scale of the European Gooseberry. On November 10 I recorded the discovery of the disease in an English nursery on standard Gooseberries on Ribes aureum stocks imported from the Continent. I have now to report that I have met with an extensive outbreak of the disease on about 20 acres of Gooseberries in a commercial plantation in Worcestershire.

It is impossible to exaggerate the gravity of the situation. Gooseberry growers now stand face to face with an extensive outbreak of the disease in this country. If the disease is allowed to spread, the whole Gooseberry crop of the country is imperilled. As legislation alone can deal with the sources of danger, it is a question of the greatest moment to ask what steps the Board of Agriculture intend to take in order to stop the introduction of the disease elsewhere and to stamp it out in the affected districts before it assumes epidemic proportions.

It is quite clear from the resolutions urging the Government to take immediate legislative action, recently passed by the National Fruit-growers' Federation, the Mid and East-Kent Chambers of Agriculture at Maidstone and at Canterbury, the Horticultural Trades' Association, the Worcestershire Chamber of Agriculture, the Fruit-growers' and Market Gardeners' Associations at Evesham and Pershore, the Herefordshire Fruit-growers' Association, and at the recent Conference of Fruit-growers held at Wye College, that both the trade and fruit-growers earnestly desire, in face of the imminent danger, the temporary prohibition of all importation of Gooseberry bushes and of plants of Ribes aureum.

On November 15 Mr. Laurence Hardy, M.P., called attention to the matter by a question in the House of Commons. The Board of Agriculture gave the following reply: "We were informed last month that the disease in question had been discovered in Worcestershire this summer, but we have no information as to its discovery in imported stocks in the last few days. The Board have no power to prohibit the importation or to order the destruction of diseased stocks, and it is not practicable to introduce legislation on the subject during the present session. A leaflet on the subject has been in circulation for some years, and several thousand copies have been distributed during the present year. The Board are now in communication with the Customs with a view of obtaining the necessary information to enable them to warn importers against purchasing Gooseberry bushes from countries where the disease is prevalent."

I should like now to comment upon the statements made in the above answer.

First, as to the supposed outbreak of the disease in Worcestershire here referred to. This case, I have ascertained on enquiry from the Board, was founded on an error. Curiously enough, however, an outbreak has, as a matter of fact, taken place in Worcestershire. On November 17 I was lecturing on the disease at Worcester, and, in consequence of information which was given to me after the lecture, I visited some plantations of Gooseberries in an outlying district, and there discovered an outbreak on about 20 acres of Gooseberries. The varieties affected were Leveller, Berry's Early Kent, Whinham's Industry, and Lancashire Lad. In one field acre of Leveller the bushes were so badly infested that practically all the young shoots were coated over at their tips with the brown spawn of the mildew containing the winter spores. It was in this part of the plantation that the fungus last season had affected the fruit, which had to be picked over before being marketed. On searching the rest of the plantations I found the disease scattered over about 20 acres, being bad on the bushes of Lancashire Lad and Berry's Early Kent, and less so on Whinham's Industry. The owner fortunately realises the seriousness of the case, and that half measures are of no use in dealing with an epidemic fungus disease such as the present. He has promised to grub up and burn over half an acre of the worst diseased bushes, to cut back as severely as possible the young wood in the rest of the plantations, and to spray the bushes carefully next spring with the fungicide recommended. From enquiries made in Evesham and the district, I ascertained on reliable authority that it has been, and still is, the custom of some firms of nurserymen to import occasionally Gooseberry bushes from the Continent; there is little doubt, therefore, that the disease has been introduced into Worcestershire in this way.

Next with regard to the question of the Board not being aware of the discovery of the disease on imported stocks, one can only deplore that the Board has no sub-department whose work it would be to understand the purport of recent resolutions sent to the Board. In this instance a resolution from the Conference of Fruit-growers held at Wye College, "calling upon the Board of Agriculture (in view of the discovery of the disease in England) to take immediate steps to prevent the importation of infected trees by the prohibition of the imports of Ribes Grossularia and of Ribes aureum" had been sent to the Board a week before the above statement was made in the House of Commons.

As to the Board having no power at present to stop this importation of diseased stock, it is of course for this very reason that immediate legislation is necessary.

Then, as to the leaflet on the subject which "has been in circulation for some years," and of which "several thousand copies have been distributed during the present year." What do we find? In a leaflet devoted to the harmless European mildew, a short paragraph, inserted in 1901, in which the bare statement is made that "the American Gooseberry-mildew was met with in considerable abundance in Co. Antrim, Ireland, during the summer of 1900." No word is mentioned that the disease is a highly infectious and recently-introduced one, nor any warning given as to the sources of danger. The case would be similar if we supposed that a highly-infectious and epidemic disease of animals, recently introduced into this country, had been dealt with by a short paragraph in a leaflet on some comparatively harmless disease. It is deplorable if the Board thinks that any good whatever can be done by the issue and distribution of such a leaflet.

Finally, with regard to the warning of importers "against purchasing Gooseberry bushes from countries where the disease is prevalent," such a course is utterly useless. In the first place, the disease is spreading so rapidly on the Continent that it is not safe to say that any country there is free. Secondly, with the system of interchange of stock that is current among Continental firms of nurserymen, it is impossible to trace the *original* source of imported plants. To take a case in point. The standard Gooseberries on which I found the American Gooseberry-mildew in an English nursery were imported from a firm in France. Now the disease has not been reported as occurring in France. Either the disease does occur there, however, or the standards were obtained from a nursery in some country, such as Germany, where the disease is known to occur.

On reading this reply given by the Board, I must say that I thought no more discouraging or disheartening answer could have been given; it showed that neither the seriousness nor the imminence of the danger was realised, and also a total unpreparedness for dealing with it. It is obvious that until fruit-growers can obtain from the Government at a special sub-department of the Board of Agriculture to deal with matters connected with the fruit industry, their interests will never be adequately looked after. I was present last Friday week at an interview given by the President of the Board of Agriculture to the National Fruit-growers' Federation. As a result of this interview, Major Boscawen is consulting with Col. Long as to the possibility of bringing in at once, as an emergency measure, a Bill to deal with the American Gooseberry-mildew. We were assured by Lord Carrington that the Board of Agriculture would regard such a Bill sympathetically.

The case stands thus. We know now that the disease is actually being introduced into this country in two ways: on imported standard Gooseberries on Ribes aureum stocks, and on imported Gooseberry bushes. The first outbreak in a commercial plantation, imperilling 20 acres, has already occurred. It is obvious that to temporise in the matter will now be fatal. Legislation alone can deal with the danger at its source, and unless the Board of Agriculture immediately introduces or actively supports a Bill prohibiting this importation, the disease will certainly spread beyond remedy or control over the whole country, as at the present time it is spreading in certain countries on the Continent where it was introduced in a similar way. I would warn earnestly all growers who are planting up Gooseberries this winter of the necessity of obtaining their stock from a firm of repute, who can give a guarantee that the plants have been raised in England. *E. S. Salmon, F.L.S., Hon. F.R.H.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

November 3 and 10, 1906.

The Week's Work.

THE ORCHID HOUSES.

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

Temperatures.—During the winter months the night temperatures must be reduced, and should be maintained as follow: East Indian house, 60° to 65°; Cattleya house, 55° to 60°; Mexican and intermediate house, about 55°; and the Odontoglossum house, 45° to 50°. Whenever sharp frosts, or cold, piercing winds prevail, entailing much fire heat to maintain the requisite temperatures, observe as near as is possible the lower temperatures given above, but when the external air is mild and genial, the higher ones should be maintained. During very cold nights, and when much artificial heat is being circulated in the pipes, its injurious effects can be somewhat counteracted by the admission of a little fresh air through the lower ventilators. In order to safely reduce the amount of fire heat in the houses, it is a good plan to cover the lower part of the roof with some kind of thick protective material. At Burford, ordinary garden mats are used for this purpose, several being sewn together with string. They are easily rolled along the roof, and can be made secure with strong cord, and where the lattice-wood blinds remain on the houses, they also are used for the same purpose, and are let down over the mats. The day temperatures should be maintained at the higher figures, and the atmospheric conditions should be regulated in accordance with the rise and fall of the outside temperature. The extra warmth obtained from the sun's rays in winter is always beneficial, providing the atmospheric conditions in the house are regulated accordingly.

Watering.—The quantity of water afforded the roots of Orchids generally, and the degree of damping of the floors, stages, &c., should now be less than hitherto; much will depend in these respects upon the position and construction of the houses, for those which are situated at high altitudes will need more damping than those built on lower ground, because the air moves more freely about the former and thus carries away more moisture. For instance, at Burford, which is situated in a very low position, and is partially surrounded with lofty trees and high hills, it is found unnecessary to damp the Cattleya house for several months in winter, the usual watering of the plants furnishing all the moisture that is required. In the East Indian house, in which a considerable amount of fire heat is used, the paths, &c., should be damped both during the morning and the afternoon, and the ground beneath the hot-water pipes and out-of-the-way corners should be thoroughly wetted. The intermediate and Odontoglossum houses will also require light dampings once or twice a day, according to the state of the weather outside. The Mexican house, which contains such plants as Lælia anceps, also Vanda cærulea, V. Amesiana, Barkerias, Odontoglossum Oiosmum, &c., will require but little atmospheric moisture under any circumstances until spring commences. Plenty of fresh air is

what these plants require, and this should be admitted liberally whenever practicable. Immediately the deciduous trees outside have shed their leaves, and especially if the weather continues mild, advantage should be taken to cleanse the houses inside and out, so that light may be freely admitted to the plants. At the same time the collection of plants may be rearranged on the stagings, and the plants carefully examined for insect pests, and their foliage sponged with tepid rain-water. If thrips, &c., have been troublesome, the houses should be vaporised on two successive evenings, after which they will not require fumigating again for several months.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq. Cleveley, Allerton, Liverpool.

The Tying and Training of Plants.—Winter is the best and most convenient season for the carrying out of work of this kind. If the interior of the plant houses has been thoroughly cleaned, attention should now be given to training or shaping any plants intended to be grown on as specimens, either for exhibition or otherwise. However good in health a plant may appear, its beauty may be marred by unskilled training. Plants of this description are often seen in the exhibition tent, and if exhibitors only realised how many points they lose in competition by an irregular system of training, more attention would be given to this item in plant cultivation. There is also much satisfaction to be had from a well-grown, evenly-balanced plant even when the specimen is not in flower. Nothing can be in worse taste, or a greater eyesore, than a house containing deformed plants. Many of the most handsome stove plants are climbers or trailers, and require the support of a trellis of some kind to enable them to display their flowers to the best advantage, and for this purpose the balloon-shaped trellis is perhaps best. When galvanised wire is the material used for making trellises, it should receive a coat of paint, as the acid contained in the galvanised metal acts very injuriously on plants in contact with it. To overtrain a plant is objectionable, and once it has been put into shape, the outline should be maintained in a free manner, so that the growth and flowers may develop in a natural way. This especially applies to Azaleas, which should not be tied in too closely. Gardenias, Ixoras, Francisceas, Chironias, Bouvardias, Statices, and Ericas will require a few neat stakes to keep them in shape, but do not use more than are necessary. Let all stakes that are for training or supporting plants be painted of a light green colour, using a little varnish in the paint, as this preserves the stakes. In growing soft-wooded plants, such as Fuchsias, Pelargoniums, and Begonias, timely attention to stopping becomes necessary when they are quite young, and the foundation of the plants is being laid for future development.

General Remarks.—Bulbs or tubers in store, such as those of Caladiums, Gloxinias, Begonias, Gloxinias, and Achimenes should be examined at least every fortnight, and any that are unsound should be removed, to save others from contamination. Open the ventilators of pits and frames on all favourable occasions, taking care always to prevent cold draughts. All kinds of potting material should be put under cover, and not left exposed until actually required. The exercise of such forethought will be amply repaid.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Orchard House Trees.—Early varieties of Peaches and Nectarines in pots should now be placed indoors, but the structure must be freely ventilated both by night and by day. Cherry trees in pots should be treated in the same manner. Pot trees of Apples, Pears, and Plums should now be placed in a sheltered position outside, and their pots should be plunged in ashes, so that the frost may not break them. Should the weather be severe, a good covering of long litter or of leaves placed over the pots will preserve the roots from injury. The roots of newly potted trees should now be ramifying in the fresh compost, and must be kept in a suitable condition of moisture, and on no account must the soil become soddened.

Cucumbers.—The recent exceedingly mild weather has been in favour of these plants, and has enabled the pits in which they are growing to be maintained at a night temperature of 67° without excessive fire heat, which would be conducive to the development of red-spider and other insect pests. Allow a little ventilation whenever the weather is favourable, and if only for half an hour it will benefit the plants. The foliage should now be kept a little drier, but sufficient atmospheric moisture must be supplied by frequently damping all available spaces in the house. Strong, healthy plants will show abundance of fruits, which should be thinned to about one to a node. Give the plants frequent top-dressings, in small quantities, of rough leaf soil, a little loam, and old Mushroom bed manure. Keep a sharp look-out for fly and red-spider, and vaporise the structure on their first appearance. Two gentle fumigations, the one at night-time, and the other the first thing in the morning, are much better than one excessive dose. If the same plants are required to be grown until the beginning of next required to be grown until the beginning of next year, their lateral growths should be encouraged to develop, and their roots be kept near to the surface of the soil and in a healthy condition. There is no better stimulant for Cucumber plants at this season of the year than warm, weak liquid-manure, given once or twice a week. Cover the pits with mats on very cold nights, for this will assist in maintaining a suitable temperature without undue fire heat.

Vine Eyes.—When the vines are pruned, some of the ripest pieces of wood should be selected, tied in bundles, and labelled, for future "eyes" for propagation in the spring. The bundles should be heeled in under a north wall during the winter.

THE HARDY FRUIT GARDEN.

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

General work.—During wet weather much needful work can be done, such as the cutting of stakes to a suitable size and length and sharpening the ends, afterwards tying them in bundles, and creosoting the points. If stakes intended for permanent use are treated with creosote, they will last several years longer than they would if not so treated. Large labels needed for the fruit tree quarters may be sharpened, painted, and the names written upon them. Labels that can be conveniently seen from the paths are necessary for Strawberry and Gooseberry plantations, and they should therefore be made about 18 inches to 2 feet in length. Cuttings of Gooseberries and Currants and the like may be made neatly during such weather. The cuttings may be made 10 inches or one foot long, and all the lower buds should be taken away, leaving only about three on the apex. The cuttings should be tied up in bundles and labelled with the number and variety, and laid in again for the time being in a box or in the border. Soils for various purposes may be mixed up in a shed; shreds can be cut into convenient lengths, remembering to keep them very narrow. Tools should be sharpened and oiled, bearing in mind that all tools should be kept in as perfect a condition as possible, in order that the work performed by them may be of the best description.

Manuring of Fruit Trees.—Some soils require much more manure than others. Large crops of superior fruits can only be obtained by a judicious application of the proper manures. Farmyard manures must always form the staple manure, and chemical manures should be regarded as auxiliaries. Potash constitutes a large proportion of the ashes of fruit trees; nitrates, phosphates, and lime must also be present in the soil, if the best results are to be obtained. Farmyard manure supplies all of these, with the exception of lime, in greater or less quantities. In conjunction with farmyard manure, muriate of potash may be used with good effect at the rate of 5lb. to a pole, or not less than 8 cwt. per acre. Phosphoric acid should be supplied in the form of superphosphate, or bone meal, or basic slag. Either of these substances may be used in the same proportion. Lime should be applied at about every three years. No manure is necessary until the trees commence to bear fruit. If the land has been well broken up, young maiden trees often grow too vigorously, and it is necessary to lift them to check growth. Farmyard manure may be supplied as a top-dressing at any time with good effects, more especially perhaps on high ground. Some fruit trees in a plantation several acres in extent, planted about 10 years ago in a low-lying situation, are smaller now than when they were planted, and many have died. Planting should be done on high ground.

Trees.—These should be sprayed several times with sulphide of potassium (1 ounce to 3 gallons of water) (avoiding the paint), and all leaves, prunings, &c., should be collected and burnt.

Prevention of pests.—Collect all leaves and prunings from fruit trees and burn them. Do not, under any pretence, allow them to be dug into the soil, as this would perpetuate many diseases and insect pests.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Broad Beans may safely be sown now if it is desired to have an early "dish" a little in advance of those sown in the open early in the spring. Unlike Peas, they are not easily damaged by frost, or by wet weather, their chief enemy being slugs, which are apt to eat them after they have germinated. Sow the seeds in lines, drawn at 2 feet apart in the usual way, on a fairly dry border facing to the south. If space can be spared in an unheated frame, seeds may also be sown in one or two boxes, with a view to planting them out in January or early in February. An early "dish" long in advance of those resulting from entirely outside culture can be secured by this means. Improved Windsor is a good variety to sow at the present time.

Early Carrots.—As soon as a suitable hotbed can be made, the first sowing should be got in. After the material has well settled down, cover this with good soil to a depth of 12 inches, and make it moderately firm. Sow the seeds broadcast, and gently water them in. Do not cover the seeds more than ¼ of an inch deep. Keep the frame slightly tilted in order for the excessive heat or moisture to escape. Choose a small rooting variety for sowing at this date, Sutton's Intermediate Forcing being one of the best. The root is quite round in shape, has a small core, and matures quickly. Arrangements should be made for making successional sowings.

Hotbeds.—There will be much use for hotbeds from the present time onwards. Potato tubers will require planting soon, also all seasonable varieties of salading. Many people depreciate almost all kinds of forced vegetables, but poor quality in these is very often due to the grower neglecting to afford sufficient air when the vegetables approach full growth. Forced vegetables can be made to compare favourably with those grown outside if this important matter is given sufficient attention, but not otherwise.

Draining.—Few gardens are well drained. If any drains require renewing or repairing, this work should be commenced, so that the disturbed soil may settle again before spring. A depth of 3 feet 6 inches should be regarded as the minimum for placing new drains. Kitchen gardens, unlike farms, are cultivated to a great depth, therefore the drains should be deep. Kitchen gardens composed of clay soils should always be well drained, not only to take away excessive wet, but because the soil being drier will also be warmer. The number of drains necessary will depend upon the nature of the soil, and the gardener is extremely fortunate who has a garden sufficiently drained by nature, and yet possesses a sufficient depth of soil to suit his crops.

The gathering of vegetables is sometimes left to someone who does not understand the best methods of doing the work, and the produce is therefore seriously depreciated. It is profitable to have this work done by someone who has been well trained to the work, and who will think well of what he is doing. As an illustration of what is meant, I may say that a lad in gathering Brussels Sprouts will probably strip large and small sprouts from top to bottom of a stem at one time, which can never boil suitably together, and part probably has to be discarded by the cook. Had he thought more about his work, he would have gathered them all of one size, thus the loss would have been saved.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR DECEMBER.

SATURDAY, DECEMBER 1—
Soc. Franc. d'Hort. de Londres meet.
German Gard. Soc. meet.

TUESDAY, DECEMBER 4—
Winter Flowering Carnation Society's first Exh. at Roy. Botanic Gardens, Regent's Park.
Exh. of Colonial-grown fruit at Roy. Hort. Soc. Hall, Westminster.
Nat. Amateur Gard. Assoc. meet.

WEDNESDAY, DECEMBER 5—
Nat. Chrys. Soc. Mid-Winter Exh. at the Crystal Palace (2 days).

THURSDAY, DECEMBER 6—
Ann. meet. of Nat. Sweet Pea Soc. at Hotel Windsor at 3 p.m.
Meeting of the Brit. Gard. Assoc. at Wesleyan School-room, Evelyn Road, Richmond, 7.30 p.m.

SATURDAY, DECEMBER 8—Dutch Gard. Soc. meet.

MONDAY, DECEMBER 10—
Unit. Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, DECEMBER 11—
Roy. Hort. Soc. Comms. meet.

WEDNESDAY, DECEMBER 12—
Nat. Chrys. Soc. Exh. of Market Chrys. in the Foreign Flower Market, Covent Garden.

THURSDAY, DECEMBER 13—
Nat. Potato Soc. Exh. at Roy. Hort. Hall, Westminster (2 days).
Manchester and North of England Orchid Soc. meets.

SATURDAY, DECEMBER 15—German Gard. Soc. meet.

TUESDAY, DECEMBER 25—*Christmas Day* (Quarter Day).

SATURDAY, DECEMBER 29—Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—41·4°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, November* 28 (6 P.M.): Max. 54°, Min. 43°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, November* 29 (10 A.M.): Bar., 30·1; Temp., 55°; *Weather*—Overcast.
PROVINCES.—*Wednesday, November* 28 (6 P.M.): Max. 54° S.W. Ireland; Min. 45° Scotland, north.

SALES FOR THE ENSUING WEEK.

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

MONDAY TO FRIDAY—
Dutch Bulbs, Azaleas, Rhododendrons, Roses, Fruit Trees, Border Plants and Perennials, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 11.

WEDNESDAY—
Dutch Bulbs in variety, Hardy Border and Herbaceous Plants, at 11; 5,000 Roses in variety, at 3 and 5; Azaleas, Palms, Plants, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Odontoglossum Crispum, Lælia majalis, and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Our Trees. This is a book* to the publication of which we have been looking forward with much interest, nor have our anticipations been disappointed. We know the special qualifications for their task possessed by the authors as travellers, as naturalists, and as foresters. We know something of the care and labour that have been bestowed by them on the preparation of the book, and we have every reason to believe that any omissions and corrections that may be needed will be supplied in subsequent volumes. The work is dedicated to the King, and is furnished with a preface by Sir William Thiselton-Dyer. Since the publication of Loudon's Arboretum in 1838 many treatises of more or less value have been issued, but none of such encyclopædic importance as Loudon's great work. In that book the details given are, if anything, too copious, and not sufficient discrimination was exercised in thinning out matters of comparatively little permanent interest. Still, it must always remain a colossal monument of the authors' industry and research. Since Loudon's time we have learnt much as to the conditions under which trees flourish in this country. Many species unknown to Loudon have been introduced; at the same time, many that he mentioned have disappeared, or are not to be found out of arboreta such as those at Kew and Edinburgh. The disappearance of certain forms may be accounted for partly by reason of unfavourable conditions of climate or soil, partly from the change in taste on the part of planters. Trees of interest or beauty or both have been neglected in favour of Orchids or herbaceous plants, or of plants yielding "cut flowers" for decorative purposes. As a consequence, the nurserymen do not care to cumber their grounds with stock that is not saleable, or which can only be disposed of slowly and in such small quantities as not to be remunerative. The renewed interest in forestry is likely to bring about a change, and the planters of the immediate future will not only interest themselves in the older and well-tried trees, but will anxiously seek for information about such trees as the Japanese and the West American Larches, the Giant Thuya, the Nordmann Spruce, and other trees of more recent introduction, which are not only ornamental, but more or less promising as timber trees. Such information they will get in the present volume, and, as it is the work of practical planters as well as men of botanical eminence, the information is not only trustworthy, but peculiarly appropriate.

"The object of the work," we are told, "is to give a complete account of all the trees which grow naturally or are cultivated in Great Britain, and which have attained or seem likely to attain a size which justifies their being looked on as timber trees, but does not include those which are naturally of shrubby or bushy habits. . . . After having seen the trees of every country in Europe, of nearly all the States of North America, of Canada, Japan, China, West Siberia and Chile, we confidently assert that these islands contain a greater number of fine trees from the temperate regions of the world than any other country. Descriptions of the best examples of all these and of interesting woods and plantations will be a prominent feature of the book. We have the special qualification that we have seen with our own eyes and studied on the spot, both at home and abroad, most of the trees, descriptions of which will be included in the book."

During the last five years one or other of the authors has visited nearly every place in England, Scotland, Wales, and Ireland where large and rare trees are to be found. Dr. Henry, in particular, has visited many places in Ireland not generally known. No particular order is followed in the text; thus we find Fagus immediately preceding Ailanthus, and that is immediately followed by Sophora. The following volumes will doubtless contain an orderly classification, and an index which will render consultation easy. Of course certain genera occupy much more attention than others, but each genus is dealt with on the same plan. First we have a description of the botanical characteristics of the genus. Then, as in the case of Fagus (the northern Beeches), an analytical key to the species is given, founded, unfortunately but necessarily, on characters which are not available by the home planter, but can only be studied in the herbarium or in the native forests. An account of the American Beech F. ferruginea is supplied. This is a species almost unknown here, but Mr. Elwes was able to collect information about it from his own investigations in America. The Caucasian Beech, F. orientalis, and the Japanese Beeches, F. japonica and F. Sieboldi, are still less known. A similar remark applies to the Beeches of China. The European Beech (F. sylvatica) is, of course, treated at considerable length, more than twenty pages being devoted to it. The varieties are mentioned, and their history detailed with copious notes and references. Many of these varieties are purely seedling variations, and from the same bag of seed Beeches of various colours and form may be obtained, so that a visit to a good nursery and an inspection of the nursery rows are necessary for the planter who desires to obtain specially distinct varieties. After the description of these varieties comes an account of the former and of the present distribution of the tree in Britain, from which it is clear that the Beech is an aboriginal inhabitant of these islands. Its occurrence in other European countries is noted, and the way in which it has, in past ages, alternated with the Pine at one time and with the Oak at another, during periods roughly corresponding in Denmark with the ages of stone, or bronze, and of iron.

After these remarks on the geographical distribution of the Beech follow details relating to the cultivation of the tree. The occurrence of seedling Beeches in great numbers strikes every observer. What becomes of them is not always so obvious. The authors furnish a solution by showing that the seedlings are often destroyed by spring frosts, or by drought in hot summers, to say nothing of rabbits, pheasants, and wood pigeons.

It will surprise some to learn that the Beech woods of Buckinghamshire no longer suffice, and that the chair-makers of Wycombe find it cheaper to import American Birch than to buy the locally-grown timber. To remedy this, Mr. Elwes counsels the raising of Ash from seed, and to fill up the vacant spaces with Larch, which, when mixed with Beech, usually keeps healthy and grows to a larger size than it does alone. No deciduous tree is better adapted as a nurse for Oak and other trees, hence it is recommended to grow Beech for coppice and to cut it in fifteen or twenty years. The formation of Beech avenues is next alluded to, and some of the famous avenues, such as that at Savernake, are noticed. Then follow references to some of the famous specimen trees scattered throughout the country, such as those at Knole, Ashridge, Newbattle, and elsewhere.

A short account of the Beech coccus follows. If taken in hand sufficiently early, scrubbing with petroleum emulsion is efficacious, but this cannot be done on a large scale nor even on a large tree. The last paragraph on the Beech has reference to the timber and its economic value, but little or

* "The Trees of Great Britain and Ireland," by H. J. Elwes, F.R.S., and Augustine Henry, M.A., Edinburgh (privately printed). Vol. i., 4to, pp. 200, tab. 60. To be [illegible] Mr. R. Edwards, Colesborne, Cheltenham.

nothing is said as to the appearance and microscopical structure of the wood, which is a rather important omission, although reference is made to Stone's Timbers of commerce, where the subject is alluded to.

From what we have said some idea may be obtained of the method adopted by the authors in dealing with their subject. We should greatly like to comment on some of the many trees, accounts of which are included in this volume, but we must, perforce, refrain. We can only add that those interested in trees will find the book most attractive to read and most valuable to consult.

It remains to speak of the illustrations—there is none in the text, but some sixty quarto plates form an atlas to the first volume. They are mostly autotype reproductions from photographs of remarkable specimens. Naturally, they vary in merit, as any one who has had anything to do with photographs of trees and knows the difficulty of securing satisfactory portraits will at once acknowledge. It is unfortunate that representations of the same trees in different seasons could not be given. The picture of the Newbattle Beech, for instance, loses in effectiveness by the absence of a portrait showing it when covered with foliage. The illustrations of seedlings are scarcely adequate, but the outline drawings of the buds of the various species of Pyrus will be very useful. The illustration of a group of Araucarias on plate 20, which, by the way, like one or two others, is misplaced, is very striking, and may be usefully compared with the views of the tree in its native forests as given on plates 17 and 18. From these latter we gather that, judged from an ornamental point of view, we have already had the best decorative effects that we are likely to get from this tree, and that we must not be disappointed if the fine specimens we still have will sooner or later degenerate. But perhaps the most interesting illustrations are those showing the trees in their native countries, as, for instance, in the case of the Araucarias just mentioned, the Servian Spruce (Picea Omorika), Brewer's Spruce, the Japanese yews, the Cryptomeria forests, the singular outgrowths from the stem of the Ginkgo in Japan, the Cypress swamps of North Carolina and others. With this notice, all inadequate as it is, we must leave the consideration of this volume. We have said quite enough to commend it to the notice of our readers, and to ensure its appreciation by tree lovers and arboriculturists. The work will, it is expected, be completed in four more volumes.

OUR SUPPLEMENTARY ILLUSTRATION.—The collection of succulents at Kew is one of its richest possessions. It is accommodated in a house 200 feet long, 30 feet high, and 20 feet wide, with a brick stage extending all round the sides, and floor-level gravel beds in the centre. With few exceptions, all the plants are grown in pots, an arrangement which for convenience has its advantages, but the plants would certainly look better and grow more vigorously if they were planted out. The house was built in 1854. Fifty years later, that is in 1904, it was reconstructed, a lighter roof with a lantern replacing the heavy flat roof, which had served fairly well during summer, but was too obstructive to direct sunlight in winter. The present structure is a house of pleasing lines, and that it is an improvement from a horticultural point of view is abundantly proved by the healthier growth of the plants since the alteration was made. The hot-water pipes in this house are so arranged that there is a stove temperature at the north end and a greenhouse temperature at the south. The view shown in our supplementary illustration is from the middle of the house, looking north. In this portion the largest of the Cacti, Euphorbias, and Aloes are displayed. The southern half is occupied by the Agaves, Dasylirions, Furcræas, and Xanthorrhœas, with a big specimen opposite the door of the giant Iris Robinsoniana from Lord Howe's Island. Succulent plants are not in great favour with English plant-growers, although they have many good points to recommend them, as was observed by the young lady who fell against the hedgehog-looking Echinocactus shown in the left-hand corner of the picture! The Kew collection has been strengthened from time to time, first by a selection from the WILSON SAUNDERS collection; then by the purchase of many of the late Mr. PEACOCK's plants; more recently still by the purchase of a portion of Mr. COOPER's collection when he left Redhill, and only a few weeks ago by the purchase of some choice, well-grown plants from Mr. JUSTUS CORDEROY, of Didcot.

ROYAL HORTICULTURAL SOCIETY.—A show of Colonial Grown Fruit and Vegetables will be held in the society's hall, Vincent Square, S.W., on Tuesday, December 4, 1 to 6 p.m., and Wednesday, December 5, 10 a.m. to 6 p.m. A lecture on the "West Indian Lime, its cultivation, uses, &c.," will be given by Mr. ARCHIBALD BROOKS, of Dominica, at 3 p.m.

BRITISH GARDENERS' ASSOCIATION.—We are informed that with a view to forming a branch of this Association at Richmond, Surrey, a meeting has been arranged to take place in the Wesleyan School room, Evelyn Road, Richmond, on Thursday, December 6, when an address will be given by the Hon. Secretary, Mr. J. WEATHERS. The hall is within five minutes' walk of the Railway Station, to which there are trains from Kingston, Staines, Feltham, Putney, Barnes, Gunnersbury, &c. Omnibuses from Ealing and Brentford pass the building. All professional gardeners in the neighbourhood should make an effort to be present. It is hoped to have the services of Councillor COOK, Hon. Secretary of the Richmond Horticultural Society, as Chairman. The meeting will commence at 7.30 p.m. The local Hon. Secretary *pro. tem.* is Mr. R. SIMPSON, 21, Alexandra Road, Richmond.

——— At the last meeting of the Executive Council eight new members were elected, bringing the total up to 960. One candidate was rejected.

WINTER CARNATIONS.—We are asked to remind readers that the first annual show of the Winter-Flowering Carnation Society will be held on Tuesday next in the Royal Botanic Gardens, Regent's Park.

THE ROYAL BOTANIC SOCIETY is experiencing a crisis similar to that through which the R.H.S. passed some years ago. We all know by whose munificence and by whose persistent exertions the situation was reversed, and we all know how successful was the change of policy inaugurated when the Society had to leave South Kensington. We have not forgotten, nor are we likely to forget, the intense interest which was felt by horticulturists of all degrees and of all shades of opinion in the Proceedings of the Society. This was due to the splendid record of the Society. Even in its darkest days the interests of horticulture were by no means neglected. Comparatively few horticulturists concern themselves about the Botanic, in spite of its attractive garden and other features. The reason is obvious. It has done little to justify its name, and it relies so much on entertainments for the amusement and recreation of its Fellows, and so comparatively little on the promotion of horticulture, still less for the advancement of botany. The interests of its Fellows as individuals have been considered rather than the advancement of the science and of the art it was established to promote. We do not overlook the exceptions, but they are too inconsiderable to invalidate the general truth of our statement. A general meeting of the Fellows was held on the 22nd ult., when a "heated discussion" took place. The council brought forward certain proposals, and, as we learn from *The Times* report, 46 voted in favour, 67 against them. Speeches "of a heated and recriminatory character were made, but ultimately the Chairman said he had no doubt the council would appoint a sub-committee to confer with three of the Fellows."

POTATO LEAF-CURL.—According to the November number of the *Journal of the Board of Agriculture* the details relating to the life-history of "leaf-curl" have now been worked out. A point of great practical importance in connection with this research is the discovery that "leaf-curl" in Potatos and the "black-stripe" or "black rot" in Tomatos are due to the same fungus, Macrosporium solani (Cooke). This discovery not only eliminates one supposed parasitic entity, Macrosporium tomato (Cooke), but will also tend to check the spread of the disease, as hitherto it was not known that soil infected by producing a crop of diseased Potatos was capable of infecting Tomatos and *vice versa*.

NATIONAL ROSE SOCIETY.—The thirtieth annual general meeting of the National Rose Society will take place at the Westminster Palace Hotel, Victoria Street, Westminster, on Thursday, December 6, at 3.30 p.m. A meeting of the general committee will be held immediately after the annual general meeting to elect the General Purposes Committee for the ensuing year. The thirtieth annual dinner will take place at the Westminster Palace Hotel, Victoria Street, Westminster, on Thursday, December 6, at 5.30 p.m., the President in the chair. Members and their friends, including ladies, are invited to attend this annual gathering of Rosarians.

NATIONAL SWEET PEA SOCIETY.—The annual general meeting will be held in the North Room, Hotel Windsor, Victoria Street, Westminster, S.W., at 3 p.m., on Thursday, December 6.

CHRYSANTHEMUM SHOW AT EDINBURGH.—In addition to the medals awarded to honorary exhibitors, as stated on page 363 of our last issue, Mr. JOHN DOWNIE now informs us that he received a Silver Gilt Medal for a group of Conifers, and Mr. DAVID W. THOMSON, Murrayfield Nurseries, Edinburgh, was awarded a Gold Medal for a collection of 380 dishes of Apples. These Apples had been cultivated in 15 districts of England, Scotland and Ireland.

CACTUS DAHLIAS AS GARDEN FLOWERS.—At a meeting of the Committee of the National Dahlia Society held last week, an arrangement was agreed to with the Royal Horticultural Society to have a trial of true Cactus Dahlias next year at Wisley, for the sole purpose of testing the merits of diverse varieties, especially those sent for trial, as regards their garden decorative qualities. The arrangement includes the making of awards to the most suitable varieties by a Joint Committee of twelve members of the Floral Committee and the National Dahlia Society respectively, during the month of September next. There is more room for improvement as garden-decorative plants, in the Cactus Dahlia Section, than in any others. Generally the plants grow too tall, the flowers have weak stems, and are apt to be too much hidden by foliage. Hitherto these Dahlias have been too much regarded as show flowers only, now some effort is at last to be made to create a garden decorative section. Pompon cactus forms will be included in the trial.

FIRST STEPS IN GARDENING.—By WALTER P. WRIGHT and EDWARD J. CASTLE (CASSELL & Co., LTD., London, Paris, New York, and Melbourne). We have here two experienced horticulturists "showing beginners how to succeed with many of the most popular flowers, fruits and garden crops." Indeed, if the novice fails after reading this book it will be his own fault, for the necessary information is plainly put and illustrated with clear photographs. Bulbs, Roses, and other favourite flowers, indoors and out, vegetables, fruit, herbs; all these receive consideration in a series of short, practical essays. The authors claim that "nature is made the teacher," and certainly it was wisely done to explain the why and wherefore of the various operations recommended, and to refer, though briefly, to the functions of roots, leaves and other parts of plants and their several requirements. The illustrations are numerous and useful, so that the book is one of the best of its class.

CHECKING STRAWBERRY DISEASES.—In a recent number of *The Journal of the Board of Agriculture* useful instructions are given for checking certain diseases in Strawberries. For leaf spot (Sphaerella fragariae) it is advised that:—Bordeaux mixture, half the normal strength, should be used on the first indication of the disease. This is important, as when the fruit is set, spraying must cease. As the fungus forms its fruit on the decayed leaves, these should be removed, and the most effective method is by burning. In the autumn sprinkle a thin layer of straw over the entire bed and set it on fire; by such means not only all diseased leaves, but also spores lying on the ground, are destroyed. This may at first sight appear to be a drastic method; nevertheless, experience has proved it to be highly successful, and followed by a luxuriant growth of healthy and vigorous foliage.

———Strawberry Mildew (Sphaerotheca castagnei, Lev.).—During recent years Strawberry growers have experienced serious loss, due to the presence of a fungus which completely covers the ripe fruit with a dense white mildew. Although usually only noticed by the grower on the fruit, the fungus generally occurs first on the under surface of the leaves, where it is not so conspicuous as when growing on the fruit, yet it is only during the early appearance of the fungus on the leaves that remedial measures can be applied with any hope of success, as spraying must cease after the fruit is set. Bordeaux mixture, half the normal strength, may be used, or the foliage should be thoroughly sprinkled when damp with a mixture of one part of quicklime and two parts of flowers of sulphur. Great care should be taken to cover the under surface of the leaves, and the soil should also be treated. As the Strawberry fungus is the same as the one causing Hop mildew, care should be taken to prevent the disease passing from one plant to the other.

NEW ZEALAND INTERNATIONAL EXHIBITION.—This exhibition promises to be one of the largest and most successful ever held in any of our Colonies. The exhibition buildings have been erected adjoining the prosperous Cathedral city of Christchurch in the provincial district of Canterbury. The exhibition by itself is well worthy of a visit, and, in addition, the tourist will have the opportunity of visiting the many scenic and other attractions of the islands of New Zealand with its great Alpine ranges and wonderful thermal springs. Anyone, therefore, in this country intending to be away during the winter and enjoy the brighter skies and more genial temperature of the New Zealand summer, should ask the High Commissioner for New Zealand (13, Victoria Street, London), for further particulars of the exhibition and the country in which it is being held.

DENDROBIUM CHRYSANTHUM.

A VERY fine specimen of Dendrobium chrysanthum, having 1,016 well-developed flowers, is shown at fig. 143, the photograph having been sent us by J. E. Riley, Esq., Arden Hall, Accrington (gr. Mr. R. Hutchinson). The plant has 38 pseudo-bulbs, the largest being 5 feet 4 inches long, and it bore 73 flowers. It is growing in an ordinary plant-stove, suspended from the roof, in a basket 22 inches in width. Above the plant are Stephanotis floribunda and Allamandas for affording shade, and in the same house there are other Dendrobiums, Cattleyas, Cypripediums, Coelogynes, &c. On the front stage there are Codiæums, Cordylines, Caladiums, Palms, and Ferns all succeeding well.

FIG. 143.—DENDROBIUM CHRYSANTHUM WITH MORE THAN A THOUSAND FLOWERS.

NURSERY NOTES.

WINTER-FLOWERING BEGONIAS AT MESSRS. JAS. VEITCH AND SONS.

STANDING recently in one of the excellent plant-houses in the Feltham Nurseries of this firm, it seemed passing strange that the winter-flowering section of Begonias could still be considered in some gardens a section of plants difficult of cultivation. Immediately in front of us were several hundreds of plants of the variety Winter Cheer, and there was not an indifferent plant amongst them. They were growing in 4½-inch or 54-size pots, were nearly, or quite, 18 inches in height, and all were flowering strongly and profusely. Each plant appeared to have all the leaves it ever possessed still in the best possible condition, thick in texture, and deep green in colour. The semi-double flowers of reddish carmine colour crowned the erect growths in a manner that is conducive to an excellent effect when the plants are thus grouped together. The pretty little Agatha, which resulted from a cross between Begonia socotrana and the tuberous-rooted "Moonlight," was flowering freely in the same house. In general effect this variety is somewhat suggestive of a dwarf-growing type of Gloire de Lorraine, but the flowers are more persistent, and the plant has certain other good characteristics which are not possessed by Gloire de Lorraine, popular though this latter variety undoubtedly is with most cultivators. Agatha compacta is of even dwarfer habit, and was flowering abundantly in 3-inch pots. The variety John Heal was the first of these hybrids raised, and, though it is not equal to the later hybrids, it was regarded at that time as a first-class acquisition. The plants are dwarf-growing, and flower very well in 3-inch pots, the blooms being single. Ensign has an erect, bold habit, which is similar to that of Winter Cheer, but the flowers are of a light shade of rose. Winter Perfection is a double-flowered variety of a shade of pink, and Julius is certainly one of the most attractive. Its flowers are exactly the shade of pink so familiar in Nerium Oleander. The plants were growing in pots 4½ inches in diameter, and the plants themselves were rather less than 1 foot in height. Mrs. Heal may be described as the brightest in colour of these Begonias, being red, but of a rather different shade than Winter Cheer. The flowers are single, and the variety blooms rather earlier than some of the others. Amongst the earliest of all may be men-

tioned Ideala and Success, which have been exhibited many times this season, but are now past. Sunray has smaller, rather deeper-coloured flowers than Winter Cheer. The greatest novelty of the varieties already named is Elatior, which gained an Award of Merit from the R.H.S. Floral Committee on Oct. 27, 1906, in the present season. It is a semi-double flowered variety, of rosy carmine colour, somewhat dwarf in growth, and slender in habit. Plants in 3-inch pots were flowering satisfactorily. Flatior has not yet been distributed. An unnamed seedling attracted our attention, not so much by reason of its habit of growth or superiority in flowering, but owing to the flowers being of a shade of orange colour. The plant has rather coarse foliage, and the flowers might be of better quality, but it possesses a colour that previously was unrepresented in these hybrids. There is no colour we can call to mind that is more effective in winter than rich orange, and it may easily be imagined how welcome in these dull, cheerless days a group of Begonias would be were the flowers of a rich shade of this colour. The seedling, therefore, in Mr. John Heal's hands may be of great value for use as a parent in future crosses.

We have left until last any mention of the species B. socotrana, one of the parents of all these most useful hybrids. It is regarded with much appreciation even in the present day, and when the plants have attained to a good size its single, mauve-coloured flowers are very effective. This brings us back again to the question of cultivation. Gardeners seem sometimes to forget the nature of the parentage of these hybrids, and the result is that they are less successful with them than they could wish. Begonia socotrana is wholly fibrous-rooted, but it was crossed with varieties of the tuberous-rooted section. The hybrids, therefore, are neither one nor the other, but an admixture of both. This circumstance needs to be remembered at all stages of the plant's growth, and it should especially be given consideration as bearing upon the water supply. The hybrids do not require so much water as tuberous-rooted varieties, nor will they flourish if such a supply is imposed upon them. As we looked upon the batch of Winter Cheer, Mr. Heal informed us that those magnificent plants were but cuttings early in the summer of the present year. This skilled cultivator, who, having been the means of bringing the hybrids into existence, has a first-hand knowledge of their requirements, assured us that, where failure is now experienced, in nine times out of ten it is due to excessive waterings. The plants make part of their growth in autumn, and they flower in winter, when transpiration and evaporation is of very limited degree; therefore, with their succulent foliage, they have no need for the free root-waterings that are necessary for tuberous-rooted Begonias when flowering in the height of summer. We emphasize this point in order that those cultivators who have had some difficulty in growing these Begonias may at least try the effect of so simple a remedy. After the flowering period is passed the plants are kept in an atmospheric temperature similar to that of a warm greenhouse, and abundance of air is afforded when the conditions out of doors will allow. The roots will be kept moderately dry, being afforded water once a week or so, according to the weather. The culture is directed to getting the tuber to swell properly and to mature fully, for which purpose it is necessary to keep the leaves healthy and green as long as practicable. The young growths, when large enough, in April or May, will be removed from the axils of the leaves, and used as cuttings for the increase of stock, and at the beginning of the month of June the plants will be cut down to about 2 inches from the base.

VARIOUS PLANTS IN OTHER HOUSES.

There are numerous glasshouses, and most of them are 100 feet long and 12 feet wide, all of them possessing span roofs. There are some structures larger than these, such as the Carnation house, which is 100 feet long and 18½ feet wide, divided into two compartments; the Rhododendron house, which was transported from Chelsea, and the Vineries, which are 120 feet long and 23 feet 6 inches wide, each being divided into two divisions.

We have alluded to the Carnation house, and have only to add in respect to it that the structure is full at the present time of well-grown plants of the "tree" and Souvenir de la Malmaison sections, which are succeeding well under the care of Mr. Weeks, who has had charge of the soft-wooded plants for many years past.

The Lapagerias are now cultivated at Feltham, and there are many plants in pots suitable for moving and, in addition, stock plants with their growths layered into a large bed. The varieties are the well-known L. alba and the Nash Court variety of L. rubra, which is kept true by the system of layering. Many of the Hippeastrums are planted out in beds, whilst

FIG. 144.—NARCISSUS VIRIDIFLORUS.

others are in pots. There are hundreds of seedlings in a very young state now growing three together in a pot.

In a more advanced stage of growth, numerous Streptocarpus were observed in another house. Messrs. Veitch's strain is now, said Mr. Heal, fixed in respect to colour, it being possible for the purchaser to obtain seeds that will produce flowers of the particular colour he desires.

There were good batches of Gesneria exoniensis, with the richly-coloured hairy leaves characteristic of the species, and which will soon produce their brilliant orange-coloured flowers; Eupatorium vernale, Clianthus, Boronia megastigma, Primula × Kewensis, Corydalis thalictrifolia, Echium Wildpretti, Cheiranthus × Kewensis (an extremely sweetly-scented Wallflower that flowers well in winter and early spring in pots); Jacobinia coccinea, and the equally desirable J. chrysostephana (yellow); Kalanchoe flammea, and other hybrids growing in 5-inch pots, the plants being at the present time about 1 foot in height; Senecio auriculatissimus, Cinerarias in batches of distinct types, including the variety exhibited under the name "Antique Rose"; Gerberas, which at the present time are being kept somewhat dry at the roots; an excellent collection of Nerines; and other miscellaneous plants in houses and in the numerous frames and pits, but which we are unable to mention individually.

The vineries contained a fine stock of young pot vines ready for delivery, and in other fruit houses there were collections of Fig trees, Oranges, &c.

THE OUT-OF-DOORS DEPARTMENT.

The principal feature out-of-doors is that consisting of the collection of fruit trees covering about 40 acres of land. Some young Apple trees that had been lifted and were lying upon the land were extraordinary for the amount of fibrous roots they possessed. They well illustrated the good effects of frequent transplantation. Most kinds of fruit trees were included in the plantations, and we need only remark upon the good appearance they had, and upon the unusually fine batches of pot trees for orchard-house cultivation, and of trained trees for cultivation against walls and trellises.

Some standard Mulberry trees of good size were an uncommon feature. Of trees and shrubs there are large quantities, especially fine being the young trees of the common Yew. One hundred thousand Seakale plants are grown here for sale each year.

In every department of this Middlesex nursery the good culture so long associated with the name of this firm was observable, but it should be remembered that Messrs. Veitch have other extensive nurseries at Langley, Buckinghamshire, and Coombe Wood, Surrey.

NARCISSUS VIRIDIFLORUS.

THIS is a species differing from all its relatives by the narrow green segments of its perianth. It is a native of Southern Spain and the opposite African coast, and is cherished as a curiosity by plant-lovers, though we expect the Narcissus Committee would not have a good word for so inconspicuous a member of the Daffodil genus. It is figured in the late Mr. Burbidge's book on the Narcissus, and was exhibited lately at the R.H.S. by Messrs. Barr and Mr. Reuthe.

LAW NOTE.

LEGISLATION FOR NURSERYMEN.

AS so many nurserymen are approaching members of both the Upper and Lower Houses of Parliament with a view to enlisting their sympathy with the movement to extend the benefits of the Agricultural Holdings Acts to land cultivated by nurserymen, seedsmen, and florists for the purpose of their business, the writer has been at some pains to ascertain what objections have hitherto been urged against the movement, and for this purpose he has spent some hours in the House of Commons discussing the matter with various members of Parliament. Want of space forbids any lengthy reference to the subject, but the following are the points which should be emphasised in seeking to gain adherence to the movement in question:—(1) There is no doubt that, presumably by oversight, an invidious distinction at the present time apparently exists between the legal position of market-gardeners and nurserymen. The law officers of the Crown have already given their opinion to this effect. (2) Although market-gardeners have enjoyed the benefits of the Acts for the past 23 years, nurserymen have hitherto made no movement on their own behalf, simply because they erroneously believed until a few weeks ago that they were on an equal footing with market-gardeners. (3) The extension of the benefits in

question to nurserymen would not enable the latter to bring enormous claims against their landlord in respect of growing stock left behind at the end of their tenancy. The Market-Gardeners' Compensation Act only gives compensation, so far as growing stock is concerned, for the planting of standard or other fruit trees and fruit bushes *permanently* set out, and the planting of Strawberry plants, or Asparagus, Rhubarb, and other vegetable crops which continue productive for two or more years. Even if there were any room for doubt on the subject, which is not the case, any objection of this kind could be effectually safeguarded by the insertion of a clause to the effect that the amount of compensation payable to nurserymen in respect of growing stock should not exceed a small fixed sum per acre. (4) The real benefits which nurserymen would secure by being brought within the Agricultural Holdings Acts would be found in compensation for such matters as drainage or irrigation works, manuring, arbitration, one year's notice to quit in the case of yearly tenants (instead of six months' notice, as at present), and compensation for erection, enlargement, or alteration of brick buildings. (5) It is true that nurserymen have a common law right to remove the wood and glass portions of their greenhouses, as well as the right to remove their growing stock, but this right gives them no protection in respect of the other matters mentioned. Even if they are given the benefit of the Acts, the nurseryman will still be a heavy loser if, for instance, he has to quit at Midsummer. (6) It is true that many of the large nurserymen own the freehold of their own land, but there are hundreds of others, especially the smaller class, who, for one reason or another, are unable to secure the absolute ownership of their land. (7) The proposed amendment of the law will not affect questions of taxation. Nurserymen are already put on an equal footing with market-gardeners under the Public Health Act, 1875, and the Agricultural Rates Act, 1896. (8) Nurserymen are already under heavy liabilities in respect of workmen's compensation, since the Act of 1900 expressly states that "agriculture" shall include "horticulture." It is gratifying to note that there are already many sympathisers with the movement, and it will be seen from the above list of objections that no argument has yet been urged against the proposals which cannot easily be refuted by an explanation of the true position of matters. *H. Morgan Veitch.*

PREVENTION OF CORRUPTION ACT.

The Horticultural Trades Association has, as we have already mentioned, recently taken the opinion of a King's Counsel as to the bearing of this Act on the subject of discounts and commissions. The full text of the Act was published in our number for Oct. 20, 1906, p. 279, and we now publish the substance of the questions put to the Counsel and an abstract of his replies.

Counsel was requested to advise:—

1. Whether the giving to a gardener
   (*a*) of a sum equivalent to 5 per cent. upon the amount of the account, or
   (*b*) of an ordinary Christmas gift, if the gift had no relative connection with the amount of his employer's account, or
   (*c*) entertainment or hospitality on the occasion of visits to nurseries, refreshments at show stands, &c.,

would be held to be "corrupt"—i.e., would the smallness of the gift have any bearing upon the question of corruption?

2. Would the offer to a gardener, while still in a situation, of financial assistance in the future event of his losing it and being out of employment be "corrupt"?

3. If the employer is aware of the gift to his employee, would this protect the giver?

4. Would an intimation in the catalogues issued by the nurserymen or seedsmen and circulated among the employers of gardeners to the effect that, "In accordance with long-established custom we shall continue to present gardeners with a commission on our sales unless we are informed that such is contrary to your wishes" be desirable, and would such a statement protect the giver?

5. If the employer is not aware of the gift, but there is a general custom among nurserymen to give these discounts or commissions to gardeners, would this protect the giver?

6. Counsel is requested to advise the association generally what attitude they should adopt, and what advice they should give their members having regard to the existing custom of giving commissions, now that Act has passed.

Summary of Replies.

1. (*a*) In my opinion a gift to a gardener of a sum representing a percentage on the amount of his employer's account would be held to be a "corrupt giving" within the meaning of the Act, whether the amount is the customary 5 per cent. more or less. It would, in my view, fall within the class of acts which the statute was intended to discourage and prohibit.

   (*b, c*) A Christmas gift may, I think, be given if the amount is so small that it could not be intended to operate as an inducement to the servant to assist in obtaining further orders, and in the same way hospitality might be shown if it was reasonable to suppose that the same thing would have been done if no such relation existed between the parties. If the expenditure involved in either case—and especially the Christmas gift—were such that the recipient, having regard to his circumstances, would be tempted to regard it as a payment, it would be within the mischief which the Act was intended to stop. The gift of anything more than a nominal sum would be imprudent and, I think, improper.

2. I think that it would.

3. The knowledge of the employer would prevent the gift being "corrupt," but the employer should be made personally acquainted with all the facts by the giver in writing.

4. This would not be enough unless it could be proved that the information was actually brought to the employer's notice.

5. It certainly would not, in my opinion. The Act was intended to stop commissions, which may, in some cases, be constantly if not invariably paid, and to put an end to the usage.

6. I can only suggest that the association should advise their members to wholly discontinue the practice, and to be careful to do nothing which could influence a gardener to assist in obtaining orders unless full information is given to the employer.

[We must add that, though in this journal we are concerned with nurserymen and gardeners only, yet the law applies equally to all other trades and employments. We are informed, though not officially, that an association is being formed with the chairman of the London Chamber of Commerce as one of its members to take immediate action in support of the new Act.]

TRADE NOTICE.

We are informed that Mr. Daniel G. Purdie, after 17 years' connection with the firm of Messrs. Smith & Simons, has commenced business as a seed merchant at 6, Waterloo Street, Glasgow.

HOME CORRESPONDENCE.

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

British Gardeners' Association.—Mr. Watson with the toothache under ordinary circumstances would be deserving of commiseration, but not so when his irritation induces him to dub the whole army of amateurs, many of whom are good gardeners and excellent gentlemen, "tinkers and tailors." For an official of the Board of Works [Agriculture—Ed.] to voice in public such mischievous nonsense is, to say the least of it, very bad taste. A good many of us know that there are gardeners and employers who pull together in the most sympathetic manner, discussing methods and working towards a common end; there are of course others. Gardening is not like anything else and cannot be run on trades-union lines. A garden is a necessary adjunct to the dwelling, and often it is a hobby, the owner knowing just how much he can afford to spend upon that hobby, but when he learns that the mischievous agitator is going to make it cost a third or a half more, he will drop it and his gardener must look for a place on the B.G.A's, register which Mr. Watson pretends to despise. The successful gardener must be born, he can't be made, and unless the instinct is born in him, he can't be successful. Such a man knows little of hours and thinks less. When he has become a half-past five man the slug and the other enemies will have good times. I remember having some correspondence upon this subject, when the movement was first set going, and was told in reply to some of my strictures that it was going to succeed, and would have a following, to which I said that no doubt it would, and the following would include all those aspiring young men, all of whom could be found any evening with their hands washed, their jackets on, and the handle of the door in their hand, waiting for the bell to ring. *T. Smith, Newry.*

——— When Mr. Watson, the cultural chief of the finest garden in the world, champions the cause of the professional gardener, one may be sure he has good reason for doing so. For many years past gardeners from all parts of the kingdom—indeed, from all parts of the world—have passed through his hands, and many of them now occupy leading positions in the horticultural world, at home and abroad. He is therefore in a position to speak with some authority on matters affecting gardeners and their welfare. It is, of course, true—everyone admits the fact—that gardeners, as a class, are the most patient, the most hard-worked, and the worst paid body of workers in the kingdom. I have often wondered how it is that some men in public positions will often vote, with both hands up, in favour of a minimum wage of 30s. a week (to be paid out of the rates) to street-cleaners for about 40 hours a week, and then, in private, to offer a skilled gardener 20s. or less per week of 80 or 100 hours to look after their fruit, floral, and vegetable treasures. And, in addition, perhaps the gardener's wife will be expected to attend to the gate or the wash-tub without any extra remuneration—unless a cottage can be regarded as such. These things take place every day, but the question is, how are they to be stopped? The evils from which gardeners suffer are not new. They are the growth of generations, and are considered to be irremediable, even by some gardeners who ought to know better. But improvement cannot be affected in a moment. It must come about gradually and rationally, one improvement succeeding another, in the same way as a florist's flower is brought to perfection after patient years of work and waiting. The first step towards the improvement of the gardener's prospects and position was taken by the establishment of the British Gardeners' Association, in which Mr. Watson took the leading part. Another step in the right direction would be the exclusion of the tinker, the tailor, the candlestick maker, the coachman, the painter, the old policemen, and other unqualified individuals from assuming the ancient and honourable title of "gardener." Such men delude the employer, and by their inability and ignorance of gardening, bring discredit on the true gardener, who, as Mr. Watson says, is "a simple, long-suffering, good-natured fellow," because he has hitherto allowed these interlopers free access to his preserves without a protest. While I agree in the main with Mr. Watson's views, I regret not being in accord with him that "trade-

unionism would be likely to prove a panacea for righting the wrongs of the gardener. I do not for one moment think that trade-union methods will be the most useful medicine for the gardeners' complaint. The B.G.A. is, I believe, working on the right lines, and shows no inclination to "bolt," as Dr. Masters said. While devoting its energies to the improvement of the professional gardeners' prospects, it has no desire to quarrel with employers who are disposed to be friendly, and to recognise that the trained gardener is a man worthy of better wages and working conditions. The objects of the Association are set forth in the rules adopted at the last annual meeting, and are such that I cannot conceive any gardener or employer taking exception to them. At the present time there are about 970 members in the Association, and if those gardeners who are still outside the professional fold would only exhibit a little more *esprit de corps*, and not sit on the fence so long, the B.G.A. would soon become an organisation—free from the drawbacks of trade-unionism—that would be blessed, not only by professional gardeners, but by all those who were willing to employ and remunerate them in accordance with their experience and ability. *J. Weathers, Hon. Secretary B.G.A., Isleworth, November 20.* [We cannot admit any discussion in these columns as to the merits or demerits of trade unionism in general. We believe the introduction of the more objectionable features of trade unionism would be most detrimental to the prospects of the association.—ED.]

THE BLACK CURRANT MITE.—Mr. Massee is to be congratulated on the result of his researches upon the Black Currant mite (see page 356). It would be interesting to note what the effects of smearing the bark on the branches of the bushes would have on the general health of the bushes. Perhaps Mr. Massee will kindly give us this information as following the results of his experiments. Up to the present time great care has been exercised by practical men not to rub or brush oil or grease on the bark of trees or bushes. For instance, bands of some material are placed round the trunks of Apple trees, and over these some sticky matter is smeared for the purpose of trapping the female winter moth as she crawls up the stem. These bands are placed on the trunks of the trees to prevent the sticky, greasy matter from touching the bark, as it is thought it would be injurious to the trees. This is generally advised not only in this instance, but also in others when treating stems or branches of trees with oil or greasy matter, for the purpose of combating insect and fungi attacks. One interesting circumstance in connection with the Black Currant mite attack came under my notice a short time ago. In a cottage garden on the banks of the Ouse, a few miles north-west of York, are quantities of Black Currant bushes, about half of which on one side of the garden are badly infested with mites, the other half on the opposite side are uninfested, there appears to be a dividing line between the infested and uninfested bushes. The river Ouse at this part overflows its banks during floods. The half of this cottage garden where the uninfested bushes are, is sometimes under water during floods. The bushes are submerged at different depths. In that part of the garden where the water does not reach during flood, the bushes are infested. Some useful experiments might be conducted in districts where the land is sometimes flooded, and where the water when at full height will only reach a short way up the bushes. *Alfred Gaut, Leeds.*

CHRYSANTHEMUMS AT THE CRYSTAL PALACE.—I do not think Mr. Molyneux is quite right in stating (see p. 342) that there is less enthusiasm displayed over the classes for large Japanese blooms. 'Tis true there was less competition this season, but I have good reasons for believing that several growers were too early with their blooms, and did not care to risk the expense of exhibiting when they had not a reasonably good chance of being amongst the prize winners. Probably the Crystal Palace is a difficult place for most exhibitors to get to. Ninety-five per cent. of the visitors present on the first day were gardeners. If the N.C.S. were to hold its exhibitions at the R.H.S. Hall, Westminster, the attendance would probably be trebled, and a large number of ladies and gentlemen would attend which would be to the advantage of the society's funds. Much might be done to make the N.C.S. show more attractive than it is, by providing extra classes for blooms on long stems. Few gardeners can afford to cut 60 blooms for one particular class, but a class for half that number, under the same conditions as required in the large class, would, I think, be well filled. With regard to blooms staged on boards, I cannot see how these can be "swept away out of the show," as the chairman of the committee said he should like to see done. What are to become of the Holmes Memorial Challenge Cups if ever this drastic and absurd treatment is meted out to blooms shown on boards? If the chairman had to take 100 blooms on long stems to various shows in the huge boxes required to contain them, I think he would, after one experience, be glad to modify his statement. Most gardeners that exhibit have to consider expenses, and few employers care to pay heavy expenses on non-successful exhibits. When there are over a dozen competitors in a class, six prizes ought to be given, viz., 1st to 6th. This would stimulate the non-successful to try again. The Anemone and Reflexed flowers should be shown in vases, having a class for, say, 12 vases, distinct varieties, 3 blooms in each vase; very small boxes would be required to contain these flowers. It is the Japanese blooms that need such large boxes which necessitates an assistant as well as the exhibitor to travel with the blooms. Mr. Molyneux is correct in criticising the judgment in the classes he mentioned. Such errors need not be wondered at, for the N.C.S. has no guide for its judges. As the classes for 48, 24, and the 12 Japanese blooms distinct are very difficult ones to judge, I suggest that these three particular classes should be judged last, so that the judges would feel that they had plenty of time at their disposal. Then perhaps there would be time for the first and second prize lots in each of the three classes to be pointed. The points awarded each bloom need not necessarily be put on the cards for public inspection. Five points might be allowed as a maximum, thus: size three, colour one, freshness one. At least 6 inches space should be allowed between each exhibit instead of as is generally the case, placing each stand close against another, making it difficult for visitors to examine properly, and adding confusion in judging. The tabling on which the exhibits are staged could easily be marked off as all the stands are of equal size. The competition in the "Grape" classes is always poor, and if two bunches instead of three of each variety were required more exhibits would be staged. At the recent R.H.S. fruit show two bunches of each variety only were required. *A. J., Essex.*

HYACINTHS FOR BEDS AND GROUPS. For the planting of beds and groups in the open air, it may not be amiss to call attention to some remarks on this subject appearing in *Moller's Deutsche Gartner Zeitung* for October 27, by Messrs. Gt. van Waveren and Kruyff, of Sassenheim, Holland, one of the most important firms of bulb growers. The best Hyacinth bulbs for out-of-door planting are those of middle size, the so-called "miniature size." In former times it used to be thought that the best for this purpose should be of large size, that is, bulbs four and five years old, which carried massive spikes of bloom, which on the whole afforded a very formal and stiff appearance. The miniature bulbs that are better liked to-day have a lighter, more graceful appearance, and it is a great advantage that the empty space caused by the failure of a bulb to grow healthily, is soon filled by the leaves and bloom of the adjacent bulbs. Moreover, the price of these smaller bulbs is proportionately cheaper—120-140 being planted on the square metre. The following varieties are those chiefly employed, blooming at the same time and being equal in growth: Cardinal Wiseman (light red), Gertrude (the same tint as the foregoing), Robert Steiger (carmine), Roi des Belges (dark red), Rose Amaranth (deep rose), Angenis Christina (pure white), Baroness van Tuyll (white), Grandeur a Merveille (pink and white), La Belle Blanchisseuse (pure white), La Franchise (creamy white), La Grandesse, L'Innocence, Madame Van der Hoop, and Pavillon Blanc (the four varieties pure white), Bleu Morant (dark blue), General Cornell'e (porcelain blue), Grand Maitre (light blue), King of the Blues (indigo), La Peyrouse (porcelain blue), Queen of the Blues (sky blue), Regulus (light blue), King of the Yellows (clear yellow), Yellow Hammer, and Sir Wm. Mansfield (violet). The following combinations go well together:—Roi des Belges (middle) and Yellow Hammer (outside); Gertrude (middle) and King of the Yellow (outside); La Peyrouse (middle) and King of the Yellows (outside); Queen of the Blues (middle) and Angenis Christina (outside); Rose Amaranth (middle) and King of the Blues (outside). Double-flowered Hyacinths give but little satisfaction, and rarely open their bells fully owing to cold weather and night frosts; the only exceptions being Princess Alexandra (deep pink), Princess Alice (white), and Blocksberg (blue). *F. M.*

GASTERIA × PETHAMENSIS. This old hybrid if not raised by, was sent out by, the late Mr. Masters, of Canterbury, and is still worthy of a place amongst Gasterias. Although there are many of the larger kinds, very grand and beautiful specimens, which produce flower spikes from 6 feet to 7 feet in height, G. Pethamensis produces a flower stem 2 feet 6 inches long and the plant is about 1 foot in height. It is, I think, rather a scarce plant, and it produces offsets very sparingly at intervals of some years. I find that many Gasterias and Haworthias lose their roots much like a bulb, and afterwards make new ones, probably yearly, especially the Haworthias. I consider both of them very beautiful, some with their pearl-like spots have a very pretty appearance and some are reticulated and tesselated, and the rather rare tesselata alba is most distinct. *J. C.*

LEONOTIS LEONURUS.—This South African plant has been a very handsome object in the garden. Its tubular flowers, 2 inches in length, are produced in whorls in the axils of the leaves on the upper portions of the shoots, four whorls being often carried on the same shoot, and are glowing orange-scarlet in colour. They were clothed with short hairs on the exterior. Thirty-five whorls brightly coloured at one time, and the most advanced, which measured over 14 inches in circumference, had more than a hundred flowers. Of the sixteen flower-bearing shoots the tallest was 5 feet in height. The leaves were 12 inches in length and three-quarters of an inch in breadth, light green in colour and deeply veined. The Leonotis was introduced in 1712, but was subsequently lost to cultivation, and reintroduced about 15 years ago. It is but little known, though it is to be met with in a few gardens in the south-west, where it flowers annually in September and October. It is one of the Labiates, and its flowers, in form and arrangement, resemble those of the Dead Nettle. It is easily propagated by cuttings of the short side shoots in the spring or summer. Should the month of October prove frostless, as it generally does in South Devon, the plant retains its beauty through the full four weeks. *S. W. Fitzherbert.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 20.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair), Dr. M. C. Cooke, Messrs. Gussow, Saunders, Bennett-Poe, Bowles, Rolfe, Worsley, Worsdell, Gordon, Hooper, Massee, Douglas, Shea, Nicholson, and Chittenden (hon. secretary).

Spotting in Apples.—Mr. Gussow said: "The Apples brought before the committee on October 23 by Mr. WORSLEY showed externally a number of depressed spots. When cut, discolorations of the tissues corresponding to the external pits were noticeable; also a number of brownish spots distributed all over the cut surface. To the naked eye the appearance of the spots was spongy. The taste of the Apple was distinctly bitter. This injury renders the sale of the Apples impossible. The cause of the spots finds an explanation as follows: The injury is most prevalent in dry seasons, and confines itself generally to fruits with softish flesh. Those of a firm, hard flesh rarely show these spots. When in dry seasons the flow of organic materials necessary for the full development of the fruits is interrupted, several groups of cells will remain poor in reserve food, and much sooner become exhausted. This exhaustion manifests itself in a brownish discoloration of the tissues. The beginning of this injury evidently takes place in the early stages of the developing fruit. One generally finds the cell-tissues, when viewing them under the

microscope, of a corky nature, and filled with small colonies of starch granules, whilst in the healthy tissues the starch has been already transformed into sugar. The brown tissues are frequently torn. The explanation of this is simple. During the growth the normal tissues only develop, and when normally expanding the injured cells, which, on account of their dry and corky cell walls, have become inflexible, are torn. The manifestation of life is stopped in these cells, and the change of the starch granules into sugar cannot take place. The remedy for this injury is a supply of water to be repeated at intervals during the dry season. It has been found that when nitrogenous manure had been applied the Apples showed more signs of injury than without manure." Mr. G. MASSEE has also shown experimentally that the same kind of trouble may be caused by certain conditions working together during the ripening process. (See *Kew Bulletin*, August, 1906.) The trouble is due to a purely physiological cause, and is not induced by the attacks of either fungal or insect parasites.

Diseased Celery.—Mr. CHITTENDEN reported that the Celery from Colyton shown at the last meeting was attacked by the fungus Septoria petroselini var. apii, and the attack seemed to be a very bad one. The whole of the leaf, blade, and petiole, was covered with the brown spots which show where the fungus was growing, and upon each of these little black spots the "perithecia" of the fungus were abundant. Each perithecium contained large number of spores which were set free on wetting the leaf, and would easily be washed on to other leaves, where they would set up the disease afresh. All the diseased parts of the plants should be destroyed by burning, and a Celery crop should not be taken off the same soil next year. Spraying the plants at intervals of about a fortnight with ammoniacal solution of copper carbonate would probably prevent the recurrence of the disease in a succeeding year.

Diseased Violets.—Mr. CHITTENDEN also reported that he had found the fungus Ascochyta violae upon the Violets shown at the last meeting. This fungus is becoming more and more prevalent upon Violets, and the only plan when the disease has once gained a secure footing seems to be to burn the stock and start afresh on fresh soil.

Fruits of Magnolia.—Mr. W. H. DIVERS sent fruits with ripe seeds of Magnolia Lennei from the gardens, Belvoir Castle, Grantham. The seeds, which are of a bright pink colour and half as large as the seeds of French Beans, are set free by the bursting of the follicles, and hang for some time attached by the long slender funicle.

Fruit of Asclepias fruticosa.—Dr. MASTERS showed on behalf of Mr. HALES, of the Chelsea Physic Garden, the fruits of Asclepias fruticosa. These fruits are large bladdery-looking pods of a white colour, and contain numbers of brown seeds, each furnished with a tuft of silky white hairs at the apex.

Maize varieties.—Mr. S. B. DICKS, F.R.H.S., sent specimens of varieties of Maize grown in the gardens of Mr. C. L. ALLEN, of Long Island, U.S.A., as follows:—

1. A cob of the primitive (?) form, in which the grains are each covered with bracts about an inch to an inch and a half long.

2. A cob of Golden Pop Corn.

3. A cob found on a plant of Golden Pop Corn, but having black grains instead of the usual light-coloured ones; a variation not at all infrequent in Zea Mays.

4. Two cobs from a plant, the result of a natural hybridisation between the (Egyptian?) primitive form with long bracts and the Golden Pop Corn. Although these were picked from the same plant, there was considerable variation in the length of the bracts to be seen, one cob having the grains entirely hidden, while in another they were exposed.

Narcissus viridiflorus.—Messrs. BARR showed this interesting species of Narcissus wild in Morocco and Gibraltar, in flower, having a tall scape surmounted by two flowers having green segments. [See fig. 144, p. 375.]

Autumn-flowering Snowdrop. Mr. BOWLES showed a specimen of Snowdrop, one of many now in flower in his garden. It was apparently a variety of Galanthus plicatus, and it was thought had not previously been seen to flower in autumn in this country.

Bonatea Ugandae (Rolfe).—This Orchid, to which at the last meeting a botanical certificate was recommended, was commented upon by Dr. MASTERS, who drew attention to the remarkable form and size of the rostellum, the length of the caudicles of the pollinia which fitted into long tubes at the sides of the rostellum, and the length of the spur, which reached to between 5 inches and 6 inches.

Uncommon Orchids.—A species of Fleurothallis from R. I. MEASURES, Esq., and Oncidium Walnewa, Rolfe (Leiochilus pulchellus Cogniaux), from H. T. PITT, Esq., of Stamford Hill, were shown at this meeting, and will be further reported upon at the next meeting.

Cattleya Fly.—Mr. BOWLES showed pseudo-bulbs of newly-imported Cattleyas, which were badly infested with the larvæ of the Cattleya fly, Isosoma sp., a pest too well known on Cattleyas. Mr. BENNETT POE suggested that the only way of dealing with the trouble is to collect the affected pseudo-bulbs, which turn black, and burn them.

Change of Food by Birds.—Mr. HOOPER said he had recently met with some remarkable changes in the habits of birds so far as their food was concerned. He had heard from Cornwall of some Tomatos being attacked by blackbirds, but could not hear of Tomatos being injured by any other birds. Again, at Blairgowrie, rooks had been discovered eating Raspberries. Mr. HOOPER is collecting information regarding the food of particular birds that frequent fruit gardens, and will be glad to receive accounts of any exact observations made upon the subject.

Sempervivum Dying.—Mr. O'BRIEN sent a specimen of Sempervivum dead and dried up, one of several that had been affected by some disease. Mr. SAUNDERS will report upon it at the next meting.

YORK CHRYSANTHEMUM.

NOVEMBER 14, 15, 16. An excellent show—the 27th in succession—was held by the above society in the Exhibition Building on the foregoing dates. Nowhere are so many groups of plants displayed as at this autumn show. Cut blooms were fewer in numbers, except in the decorative classes, which were of the usual high standard of excellence. Hardy fruit was shown in less numbers than usual, but it was good in quality. Grapes were excellent. Exhibits of vegetables were numerous and good. Messrs. BACKHOUSE & SON, The Nurseries, York, were given a Gold Medal for a very fine floral display; and a Silver-Gilt Medal was awarded Messrs. W. CLIBRAN & SON for an exhibit of Chrysanthemums.

GROUPS OF PLANTS.

The leading class in this section was for a group of Chrysanthemums interspersed with foliage plants, and occupying an area of 100 square feet. Four competed, and among these Mr. L. Hanchant (gr. to the FREDERICKS HOTEL, Ltd., Harrogate) secured the 1st prize. Mr. G. COFTAM, Alma Gardens, Cottingham, Hull, was a good second.

Mr. J. W. HIELD, Front Street, Acomb, York, won the 1st prize in the class for a group of Chrysanthemums, among four contestants: W. TALBOT AGAR, Esq. (gr. Mr. W. Barnes), Brookfield, York, being awarded the 2nd.

The best group of miscellaneous plants arranged in the form of a pillar 17 feet in height and 6 feet in diameter at the base, was put up by Mr. W. Curtis (gr. to J. BLACKER, Esq., Thorpe Villas, Selby). A class was also provided for a pillar group of decorative Chrysanthemums and green foliage plants. Messrs. E. THEAKSTONE & SONS, The Nurseries, York, were easily 1st among five.

CUT BLOOMS.

The leading class was that for 36 Japanese blooms of distinct varieties. Mr. W. IGGULDEN, Frome, Somerset, secured the leading place with medium-sized, well-arranged blooms, which were not much superior to those shown by Lord LONDESBOROUGH, Market Weighton (gr. Mr. J. McPherson), which were awarded the 2nd prize. The last-named exhibitor won in the class for 18 Japanese blooms, distinct, Lord FAVERSHAM, Duncombe Park, Helmsley (gr. Mr. D. Williams), following; but Lord FAVERSHAM was 1st among five competitors for 12 Japanese blooms. Mr. McPHERSON, with exceedingly fine examples of Edith Smith, won in the class for six blooms of a white variety; and he also secured a similar award for half-a-dozen flowers of F. S. Vallis in the class for yellow flowers. J. H. Silsbury was remarkably well shown by Mr. WILLIAMS in the class for six blooms of any other colour than white or yellow.

Incurved varieties were of a high order of merit, and it was unfortunate there was not more competition. Mr. McPHERSON easily secured the leading prizes in the classes for 24, 12, and six varieties, with grandly developed examples.

Singles.—Mr. EVERARD had the best half-a-dozen sprays of single Chrysanthemums in such useful sorts as Roupell Beauty, Crimson King, Mrs. Parkinson and Miss Annie Holden.

SHEFFIELD CHRYSANTHEMUM.

NOVEMBER 16, 17.—The annual show of this society was held on these dates in the Corn Exchange. Competition was even greater than was seen last year, although this has not obtained in the majority of flower shows this season.

CUT FLOWERS.

The cut blooms formed the leading feature of the exhibition, and an important class was the Lord Mayor's Vase class. This was for eight vases of Japanese varieties, each vase to contain three blooms of one variety. Four growers competed, the best flowers being shown by Mr. W. G. DRAKE, Cathay's Terrace, Cardiff. Among his best examples were Chrysanthemum Montigny, Miss E. Thirkell, and Mme. P. Radaelli; 2nd, The Dowager Lady HINDLIP, Hadsor House, Droitwich (gr. Mr. C. Crooks).

Twenty-four Japanese blooms, distinct.—Mr. F. S. VALLIS, Bromham, Wilts, easily won the 1st prize among eight exhibitors with a set of full-sized, well-coloured examples of Magnificent, F. S. Vallis, Reginald Vallis, J. H. Silsbury, Mrs. W. Knox, &c. Mr. DRAKE followed with good but smaller flowers. Mr. VALLIS repeated his success in the class for 12 Japanese blooms.

Incurved varieties were remarkably well shown. In the important class for 24 blooms, Mr. DRAKE's flowers were much superior to those of all other competitors. He had large, well-finished examples of W. Biddle, Godfrey's Eclipse, Mme. B. Hankey, C. H. Curtis, Pantia Ralli, and Doris Rayner. F. W. JAMESON, Esq., Aston Hall, North Ferriby (gr. Mr. J. Jennings), was awarded the 2nd prize. Mr. DRAKE had also the best 12 Incurved blooms in the smaller class for that number of flowers. The one-time important section of the Incurved varieties—the "Rundle" family—is still provided for in the schedule at Sheffield, and the flowers are very pretty, arranged with their own foliage. A silver cup is offered for two blooms of each of the varieties Mrs. E. Rundle, George Glenny, and Mrs. Dixon. Mr. H. BRAMMER, Walkley Bank, secured the trophy with clear but somewhat small blooms; 2nd, Mr. W. FENWICK, Rueben Street, Park.

Pompones were well shown in bunches of six by S. R. FLOWERDAY, Esq. (gr. Mr. Topham).

Singles.—Seven exhibits were seen in a class for six vases of single Chrysanthemums, J. G. GRACE, Esq., Riverdale (gr. Mr. C. E. Abbott), winning with desirable bunches of unnamed varieties. The premier position in the class for affiliated societies was taken by the Nether Hallam Chrysanthemum Society.

GROUPS.

Prizes were offered for a group of miscellaneous plants arranged for effect in a space measuring 100 square feet. The premier prize of a silver cup and £5 was won by Alderman G. SENIOR (gr. Mr. T. C. Baker).

Non-competitive exhibits were numerous. Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, had a fine exhibit of Japanese blooms, for which he was awarded a Gold Medal. Gold Medals were also awarded to Messrs. SEAGRAVE & Co., Sheffield, who had Chrysanthemum plants associated with foliage plants of other subjects. Messrs. FISHER, SON & SIBRAY, Handsworth Nurseries, Sheffield, for Hollies, Ivies, Conifers, &c. Messrs. ARTINDALE & SON, Sheffield, who exhibited floral decorations. Mr. W. G. GODFREY, Exmouth, staged Chrysanthemums and Zonal Pelargoniums, for which he received a Silver-Gilt Medal.

LEEDS PAXTON.

NOVEMBER 20, 21.—The eighteenth annual Chrysanthemum show of the above society was held in the Town Hall, Leeds, on these dates. The displays of cut blooms, fruit, and vegetables were a decided improvement on those of any previous exhibition held by this society. The show was opened by the Lord Mayor of Leeds.

Group classes.—The exhibits of groups generally were better than those seen last season. In the class for a miscellaneous group of plants occupying an area of 70 square feet, J. PICKERSGILL, Esq., Bardon Hill, Weetwood, Leeds (gr. Mr. J. Donoghue), secured the 1st prize for a prettily-arranged exhibit containing some splendid and well-grown Orchids. The best group of Chrysanthemums arranged in a space measuring 70 square feet was shown by Mr. L. HANCHANT, Hotel Majestic, Harrogate, and he was followed by O. B. SIMPSON, Esq., Adel, Leeds (gr. Mr. A. Lupton). Other prize winners in the group classes were T. WINN, Esq. (gr. Mr. H. Dennett), P. GREEN, Esq. (gr. Mr. T. Saunders), and J. PICKERSGILL, Esq. (gr. Mr. J. Donoghue). The last-named exhibitor displayed the best table among nine decorated with Begonias, Lily of the Valley, and cut foliage.

CUT BLOOMS.

The chief class was that for 36 blooms of Chrysanthemums, to include 18 Japanese and 18 Incurved varieties, and for which a challenge cup was offered. Mr. DRAKE, Cardiff, staged the premier collection, and he was followed by Mr. THORNTON, Lamb Hall.

In the local classes, for which a challenge cup was also offered, there were three remarkably good exhibits, and there was little to choose between the 1st and 2nd prize groups staged by JOSEPH BYLE, Esq., Asket Hill, Roundhey, Leeds (gr. Mr. C. Shaw), and JOSEPH PICKERSGILL, Esq., (gr. M. J. Donoghue) respectively. The first-named exhibitor was also successful in the principal local classes.

FRUIT AND VEGETABLES.

The best two bunches of Black Grapes were shown by Mr. O. PILLING, and the best two bunches of white by A. WILSON, Esq., Tranby Croft, Hull. In the classes for single dishes of Apples and Pears prominent prize winners were Messrs. D. WILLIAMS, O. PILLING, and CROSSFIELD.

The principal prize winners in the vegetable classes were Messrs. GROUNDWELL, O. PILLING, BAILEY, and SHAKLETON.

Many trade exhibits of excellent quality were staged. *J. F. D.*

ROYAL METEOROLOGICAL.

NOVEMBER 22.—At the meeting of the Royal Meteorological Society on this date, Mr. W. Marriott read a paper on "The abnormal weather of the past summer and some of its effects."

The principal features of the weather over the greater part of England—especially the south-east—were the high state of the barometer throughout the whole of the period, except a portion of August; the high temperature in July, August, and September; the great amount of sunshine; and the deficiency of rainfall. Over the south-eastern portion of England more than 900 hours of bright sunshine were recorded during the four months June to September; while at a few stations in the extreme south and on the east coast, over 1,000 hours were recorded. The sunshine was more than 200 hours above the average over the Thames basin and on the coasts of Lancashire and North Wales.

The most remarkable feature of the weather during the past summer was the exceptional heat wave which occurred between August 30 and September 3. The temperature rose above 90° over a large part of England on four consecutive days, viz., August 31-September 3. Mr. Marriott has not been able to find any previous record of readings over 90° for a similar period. The air was very clear, and brilliant sunshine prevailed over nearly the whole of the country. Another remarkable feature connected with this heat wave was the great dryness of the air; for on September 1 and 2, differences of 25° [?] were observed between the readings of the dry and wet bulb thermometers, and relative humidities below 30 per cent. were recorded at many inland places. Owing to the great heat, vegetable matter became very inflammable, and consequently there were more stack fires than usual, and extensive stretches of heather and gorse were also set on fire.

The author said that with the advent of the hot weather the death rate increased considerably, and he pointed out that when the mean maximum temperature for the week reached 72° the death rate at once began to rise. The increase of the death rate was made up almost entirely of infants under one year of age. This was shown to be due to the prevalence of infantile epidemic diarrhœa, which sets in when the mean maximum temperature for the week rises above 72°.

Attention was called to the effect which the high temperature had in turning milk sour, and in rendering it unfit for drinking purposes unless it had been first Pasteurised or sterilised. Not only was the ordinary milk a source of danger to infants during the hot weather, but the great use which is now made of tinned foods also tended to produce ptomaine poisoning and cause diarrhœa.

Owing to the drought, food for cattle was very deficient, and consequently there was a falling off in the milk supply of as much as 30 per cent.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 27. The annual dinner of the above society was held at the Holborn Restaurant on this date, under the chairmanship of C. E. Shea, Esq., president of the society. About 115 members and friends assembled, and included in the company were many ladies. Dinner was laid in the Royal Venetian Chamber, which was prettily decorated with flowers, plants, and fruits contributed by some of the supporters of the society. Among others present we noticed Messrs. C. Harman Payne, Thomas Bevan, J. H. Witty, Henry Cannell, H. J. Jones, D. B. Crane, Eric Such, E. Hawes, S. Mortimer, J. W. Moorman, G. Castelton, Bryan Wynne, W. Howe, &c.

After the usual loyal toasts had been duly honoured, the Chairman proposed the principal toast of the evening, "The National Chrysanthemum Society." He contrasted the Chrysanthemum of to-day with the flower at the time when the National Society was instituted, and he regarded the advance to be due in no small degree to the efforts of the parent society. This progress was greatly the result of competitive shows, and especially was this true in the case of the single varieties, which had lately found great favour with the public. Striving to be first brought out many good qualities in a person, and it was a healthy and ambitious bent to endeavour to excel in competition. The Chrysanthemum was essentially a poor man's flower, and it gave him great pleasure to attend the Chrysanthemum shows in the East End of London, and also to see the brightness the Chrysanthemum brought into the homes of the poor. He instanced the case of one exhibitor at the People's Palace, who informed the speaker that the money which he formerly spent in the publichouse was now devoted to purchasing new varieties of Chrysanthemums. He was proud of the *personnel* of the society, and congratulated the members on their admirable committee. He regretted the loss of their popular treasurer, the late Mr. A. Taylor, but he had confidence that, as the old members drop out, others will step forward to fill the gaps. He was impressed with the forward movement seen at the shows, and especially with the decorative aspect as distinguished from the mere competitive character of the exhibitions. They must cater for the multitude, and endeavour to attract the public with a beautiful display. He was especially pleased to notice in this direction that at some provincial shows, such as at Edinburgh and Birmingham, the show board had been entirely eliminated. However, they must "make haste slowly." The use of vases has two concurrent results: it limits the number of varieties shown and raises the cost of transit. By selecting the best 15 varieties only, much other beautiful material is lost to the shows, while the transit of flowers with long stems, &c., is a matter of expense and difficulty. At the recent autumn show he looked in vain for many old favourite flowers. Avalanche was absent, nor could he find a single example of Edwin Molyneux. He concluded by asking what would our country do without the Chrysanthemum, and what would the Chrysanthemum do without the National Society?

The President then proceeded to distribute the prizes to the successful exhibitors.

Mr. J. H. Witty proposed the toast of "The Donors of the Special Prizes." He pointed to the good example set them by their president in this matter, and regretted that, owing to its having now been won outright, the trophy presented by the Ichthemic Guano Co. was lost to the society, although the committee were hopeful of its being replaced.

Mr. J. A. Botham, assistant manager to the Crystal Palace Company, in replying to this toast, said that he regretted that his society had been unable to fulfil all their promises in the matter of special prizes, but it was due to the action of certain underwriters, who had pressed upon his company, but he was glad to say the Crystal Palace affairs had improved, and he saw better prospects for them in the future. The National Chrysanthemum Society would always be welcomed at the Palace at Sydenham.

Mr. T. Bevan, chairman of the General Committee, in replying to the toast of "The President, Vice-President, and Officers of the Society," appealed for increased support. They now hold four shows, but they have managed to pay their liabilities and accumulate a small reserve fund. The proposed *Year Book* was a new departure, and this they hoped to issue shortly. The committee were endeavouring to increase the value of the prizes offered at the society's great show during the coming year, in order to attract the best flowers. The society is now affiliated with over 130 other societies, which naturally look to the parent society to lead the way, and they must endeavour to have the best at their exhibitions.

Mr. Richard Witty, secretary, also replied.

The chairman vacated the chair at this stage of the proceedings, and Mr. Thos. Bevan was voted in his place.

Mr. Harman Payne, in proposing the "Affiliated Societies and Exhibitors," advocated the holding of a provincial show in connection with the affiliated societies.

Other speakers were Messrs. Henry Cannell, E. F. Hawes, R. B. Leech, W. Harrison, D. B. Crane, H. G. Cove, F. W. A. Scholl, and W. G. Bunn.

Obituary.

M. O. THOMAS, OF METZ.—We learn from the *Revue Horticole* of the death, on November 3, of this distinguished fruit-cultivator and pomologist. His *Guide Pratique de l'Amateur des Fruits* is a useful work of reference. M. Thomas was in his 63rd year.

MR. W. PARNELL.—We regret to learn, as these pages are passing through the press, of the death of Mr. W. Parnell, the outdoor foreman at Glasnevin. We shall give fuller particulars in our next issue.

ENQUIRIES AND REPLIES.

HEATH'S BOOK ON VIOLETS.—Can any reader inform me where Heath's Book on Violets can be procured? *Percy Alldis*

EVAPORATING FRUIT.—Can any reader tell me where I can obtain a stove, small size, for evaporating fruit? *W. Bailey.*

PLANT PORTRAITS.

PEAR DOYENNÉ GEORGES BOUCHE.—A seedling from Doyenné du Comice, but more prolific, and lasting till February and March. Puget-Gundon in *Revue Horticole*, November 1.

GORDONIA GRANDIS.—A Camellia-like evergreen shrub, described as having the foliage of the Laurel-Cherry and the large white flowers of a Cistus. *Revue Horticole*, November 16.

LOTOSOPS TOURNEFORTH.—A white-flowered species with much divided, spine-tipped leaves and dense covering of thread-like hairs like spider's webs. *Revue Horticole*, November 16.

ANCISTROPHYTUM.—A tropical African Cucurbit, flowering in the Brussels Botanic Garden. *Tribune Horticole*, November 17.

ANSWERS TO CORRESPONDENTS.

CHALLENGE TROPHY COMPETITION: *Interested.* Before offering a Challenge Trophy for competition over a number of years, a Committee should take every possible care to state the conditions of the competition so accurately and definitely that alterations will not be called for until the Trophy has been won outright by someone. When circumstances arise that make an alteration necessary the Committee should take into their confidence those exhibitors who have already competed for the Trophy, and if possible obtain their approval. We are speaking, of course, of cases in which it is possible for an exhibitor to acquire the Trophy as his own personal property, and who therefore, having won it once, may be considered to have a kind of vested interest in it. In cases where the Trophy is only held for one year and at the expiration of that time is returned to the Committee, the circumstances are quite different, because an entirely new competition is commenced each year.

CHRYSANTHEMUM LEAF MINER: *F. J. P.* The leaves are injured by the leaf miner. Preventive measures would include the spraying of the plants with quassia extract, or other distasteful liquid in order to prevent the females from depositing their eggs upon the leaves. Remove badly affected leaves and burn them. You will find a page illustration and a note of this pest in the *Calendar of Garden Operations*, to be obtained from our publisher, price 7½*d*., free by post.

CUCUMBER SPOT. *H. J. P.* The spores of all fungi are very minute, and it need excite no wonder how the disease entered your stock. You could easily convey the spores on your clothes, or it may have been carried by the wind. Spraying the plants with liver of sulphur, half ounce to two gallons of water, is the best treatment, but be careful of the paint, which is turned black by this substance. If your houses are empty cleanse them thoroughly, using a little carbolic acid in the water when you scrub the woodwork, &c.

CYANIDISING PLANT HOUSES: *Fotpanshire.* We have recently published much correspondence on this subject. On page 222, April 7, 1906, is given a figure of a simple apparatus for cyanidising plant structures, accompanied by a note on the subject by Mr. J. G. Blakey. Other articles on cyanidising will be found in our issues for February 10, 1906, p. 85, and March 3, 1906, p. 142.

DAMAGED PEACH TREES: *T. S. L.* You have not forwarded the tenancy agreement, the wording of which may materially affect the position. You state that the land was let as a nursery, but the facts you mention appear to imply that the land was used as a market garden. If you have read the recent legal articles in these columns, you will have observed that nurserymen and market gardeners are entitled at the end of their tenancy to remove even fruit trees in full bearing, provided they are really nursery trees, and not trees of such a size as to render it impossible for them to be dealt with in the way of trade. Similarly the tenant could have removed his greenhouses, and presumably he failed to do so either through ignorance or on account of some special agreement with you. If the land were used as a market-garden under such circumstances as to cause the Market-Gardeners' Compensation Act to apply, then the tenant would be entitled to recover from his landlord compensation for any fruit trees permanently set out which he may have left behind him. There are no facts mentioned in your letter which would enable the landlord to obtain redress from the tenant; in fact, unless there are special circumstances which you have not stated, it looks as though the tenant had not exercised his full rights, though his intentions may have been malicious.

FIGS: *J. L. W.* We cannot say whether the tree is attacked by the fungus disease (Cercospora) unless we receive specimens. You do not say whether the foliage is spotted or blotched. The falling of the "fruits" at the stage you mention would appear to indicate the presence of disease, or lack of fertilisation of the flowers, which of course grow in the receptacle we call "fruits."

FUNGUS: *G. J.* Your specimen is the Hard Puff Ball, Scleroderma bovista. It is not edible.

FUNGUS ON ELMS: *J. F. J.* The fungus is Nectria cinnabarina, a common species on dead and decaying timber, and one especially common on the Red Currant. The mycelium is often present in the tree much beyond the parts where the red conidial condition appears. Diseased branches should be cut off and burned, as should also rotten sticks lying on the ground. We suspect the trees were too large to be shifted without suffering serious check and are dying in consequence, the fungus being ever present and ready to assist in the work of destruction.

HORTICULTURAL LECTURER: *Enquirer.* We do not know that the Royal Horticultural Society's interesting gardens at Wisley offer facilities for the making of a good lecturer. Audiences in such a place would be, we imagine, very small and occasional. But the gardens contain a great variety of interesting plants, a knowledge of which would go a considerable way towards furnishing the experience a professional horticulturist must acquire, and we take it you must be a horticulturist first and a horticultural lecturer afterwards. We do not know what your present experience and knowledge of the principles which underlie horticultural practice amount to, nor to what particular branch of gardening you intend to devote your lectures. But if it is a County Council lectureship for which you are anxious to qualify yourself, out-of-doors gardening will be most important, particularly the cultivation of fruits, vegetables, salads, and such flowering plants as may be grown in cottagers' gardens. Fencing, hedge-making and cutting, draining, and all the operations pertaining to the cultivation of land should be studied, together with the means available for combating insect and fungus pests. In these circumstances we think if you go to Wisley you should make up your mind to learn as much as possible during your stay there. Make a change after the expiration of one year.

NAMES OF FLOWERS AND FRUITS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Gih.* Bleuheim Pippin. *D. R.* 1, Leon Leclerc de Laval; 2, Beurré Ananas; 3, Claygate Pearmain; 4, Harvey's Remette; 5, Mère de Ménage; 6, Malster. *I. H.* 1, Wealthy; 2, Cornish Aromatic; 3, Beurre Bachelier. *Eton.* The Pear was decayed. Apple, Wyken Pippin. *W. S.* We cannot name such tiny Apples. The Pear is Black Worcester. *J. C. W. & Son.* Hanwell Souring. *I. Dixon.* 1, Passe Colmar; 2, Knight's Monarch; 3, Blue Pearmain; 4, Scarlet Leadington; 5, Stirling Castle; 6, Baldwin; 7, Orange Pippin; 8, French Crab. *Pinehurst.* Baron de Mello.—*F. P.* Nanny Apple. *G. B.* 1, Gascoyne's Scarlet Seedling; 2, Harvey's Wiltshire Defiance; 3, Too poor to be named; 4, Bergamot d'Esperen. *W. D. S.* Golden Ducat. *W.* 1, Hanwell Souring; 2, Grange's Pearmain; 3, Belle Dubois; 4, Melon; 5, Pitmaston Nonpareil; 6, Aston Town. *E. C.* 1, Dumelow's Seedling (Wellington); 2, Remette du Canada; 3, Golden Harvey; 4, Margil; 5, a poor specimen of Cox's Orange Pippin.

NAMES OF PLANTS: *J. Smith.* 1, Nephrodium molle; 2, Scolopendrium vulgare cristatum; 3, Davallia dissecta; 4, Davallia canariensis; 5, Pteris serrulata; 6, Scolopendrium vulgare. *S. I. B.* Verbascum nigrum. *G. McG.* The leaves are those of Ginkgo biloba, or as it used to be called, Salisburia adiantifolia. The common name "Maidenhair tree" has been given the species owing to the cuneate or wedge-shaped leaves being similar in form to the pinnæ of Adiantum cuneatum. The species was introduced into this country from Northern China, and it is perfectly hardy. It belongs to the natural order Coniferæ.—*G. C. L.* You have mixed your labels. Your No. 2 is Libocedrus chilensis. Your No. 1 is either Cephalotaxus pedunculata or C. drupacea. We cannot tell which from the leaves only. It is certainly not C. Fortunei. *G. M. G.* 1, Euonymus europæus; 2, Leycesteria formosa; 3, Berberis empetrifolia; 4, Berberis Darwinii; 5, Azara microphylla. We wish every one would send as good specimens and as carefully labelled as you do.—*J. H. J.* Planera aquatica.—*H. M. C.* 1, Lupinus arboreus; 2, Juniperus communis; 3, Juniperus sabina variegata; 4, Skimmia japonica; 5, not recognised; 6, Spiræa Thunbergii.—*C. N., Co. Clavdon.* The upright form of Cupressus sempervirens.—*H. H.* Cypripedium insigne Maulei and Adiantum tenerum.—*T. A.* 1, Oncidium cheirophorum; 2, Oncidium pubes; 3, Stelis ophioglossoides; 4, Pleurothallis rubens; 5, Mormodes Buccinator.—*Nil Desperandum.* 1, Oncidium Papilio, but not fully developed; 2, Oncidium prætextum; 3, 3a, 3b, are all forms of Oncidium Forbesii; 4 and 4a, Oncidium tigrinum.—*G. D.* Panicum plicatum. *H. R.* 1 and 2, Codiæum (Croton) interruptum; 3, Codiæum angustifolium; 4, Sonerila Hendersoni; 5, Phyllanthus nivosus; 6, Hibiscus Cooperii.

PARADISE STOCK: *H. H.* This stock, like the Crab stock, is a variety of Pyrus malus (Apple), which has a dwarfing effect upon the varieties of Apple grafted upon it. It is possible that an equally dwarfing stock could be selected from seedling Crabs, and there are already several such varieties known as "Paradise."

POPLARS: *Constant Reader.* It will depend upon the position and conditions in which the trees are growing, and whether they are desired to be 45 feet or 55 feet high. If they offer no disagreeable obstruction, however, the better plan would be to cut them to the point at which they were pruned six years ago. You need not consider the capacity of the tree to support the growth which will result from the pruning, for the lower you prune, the more growth will the tree produce.

POTATO. *W. C. S.* The tuber is badly attacked with the "scab" disease. Add plenty of lime to the soil, mixing them well together.

SPRAYS OF CHRYSANTHEMUMS: *W. W.* The committee should have worded the schedule somewhat as follows: "Six vases of single Chrysanthemums, distinct, each vase to contain six sprays, and each spray to have not fewer than . . flowers. Or, if no thinning at all was to be insisted upon, the word 'disbudded' should have been inserted before the word 'sprays,' deleting the remaining part of the sentence." You will see that we have assumed that the committee intended to have unthinned, or only partially thinned exhibits, and we do this because they employed the word "spray," which in horticultural usage is generally intended to describe something other than a stem which has been thinned to one flower, or as, in the case of composite plants, to one "head" of flowers. We can sympathise with you in suffering the disqualification, because it is partly attributable to the somewhat indefinite manner in which the schedule was compiled. That readers may understand we will quote the wording as it appeared in the schedule: "Six vases of single Chrysanthemums, distinct, each to contain six sprays."

TURF FOR ANALYSIS: *W. D.* We do not undertake to analyse soil, but if you are a Fellow of the Royal Horticultural Society you can have it analysed for a small fee by the Society's consulting chemist, Dr A. Voelcker, 22, Tudor Street, London, E.C. The turf sent is a good sample. When using this for the cultivation of Grape-vines you should incorporate with it a little phosphatic and potash manures, such as bone manure and wood ashes. For stone fruits a little lime rubble will be an additional advantage. Work plenty of farmyard manure in the soil of the kitchen garden.

VINES: *Constant Reader.* You do not say whether the vines are growing indoors or out-of-doors. You should cut back the laterals to two or three buds on each. Dress the vines in the manner recommended to *J. F.* in this column in last week's issue.

COMMUNICATIONS RECEIVED.—D. W. T.—You will see the omission rectified in our present issue.—L. B., New York.—S. P. R. A., Antibes.—E. S. S.—Sir F. L.—Interested.—A. D. W.—J. J.—C. I. P.—M. J. S.—J. W.—F. I. F.—J. H. M., Sydney.—S. Schneider.—H. F. McM., Ceylon.—W. Duncan Tucker.—P. & S.—We have communicated with our reporter.—*Woottonnana.* The words were printed as sent us by the secretary.—F. E.—C. W. T.—W. A.—W. R. C.—C. S. & Co.—Mac.—W. H. B.—W. N.—F. W. F. T. J. S.—W. P. V. C.—W. F.—W. B. W. K.—W. W. R. & Co.—Aqua regia.—J. E.—J. W. I.—C. H. W.

Photo by W. J. Vass.

VIEW IN THE HOUSE OF SUCCULENT PLANTS, ROYAL GARDENS, KEW.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE
Gardeners' Chronicle

No. 1,041.—SATURDAY, December 8, 1906.

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ILLUSTRATIONS.

SCOTCH GARDENERS IN AMERICA.

IT is not long since we commented on the fact that, although many of the leading horticulturists of the United States are of British origin, yet that we heard comparatively little of them after they have left their old home.

So far as Scotsmen are concerned, the deficiency is supplied in a very interesting manner by Mr. Wallace, of the Florists' Exchange, who has contributed to the Scottish Horticultural Association the following details, which we are privileged to publish:—

WHAT SCOTSMEN HAVE DONE FOR HORTICULTURE IN AMERICA.

Commercial horticulture in the United States may be said to have had its beginning in the early years of the nineteenth century. There were, of course, long before that time, many excellent private gardens in the country, in which many exotic plants were grown, yet those gardens were isolated in proportion to the population.

Prior to, say, 1825, but little greenhouse glass was to be seen in this country used for the growing or forcing of plants. The best market for plants, flowers, and vegetables in those early days was found in Philadelphia, and to that city gardeners from the Old World were first attracted. Incidentally, it may be stated as significant that many of the men who then came to America in the capacity of private gardeners, after they had accumulated a little money, embarked in business in a commercial way; and the same remarks hold true to-day.

The growing of plants, flowers, and vegetables for profit, however, soon became very general, progressing with leaps and bounds until the breaking out of the Civil War in 1860, when the industry received a set-back which was felt for the next six or eight years. When the country again became tranquil, say about 1870, there were several thousand commercial plant and flower-growing establishments in the United States. Fifteen years later, in 1885, a writer going into statistics, estimated that 8,000,000 cut Roses reached New York market alone in that year, and that the aggregate number of Roses grown around Boston, Philadelphia, Cleveland, Chicago, Washington, and other places could not have been less than 24,000,000. The number of Carnation flowers grown was said to be at least 120,000,000. Furthermore, it was estimated that one-fourth as many Roses and Carnations were grown by private establishments. The amount of space occupied by flowering-plants and bulbs in the open air was estimated to aggregate at least 12,000 acres, in addition to several thousand acres used for seeds.

The latest statistics, those compiled by Dr. Galloway, of the Department of Agriculture at Washington, D.C., in 1900, show that there were at that time probably not fewer than 9,000 commercial florists' establishments in the United States, having a glass area of 22,500,000 square feet. The income to the producer was set down as averaging 50 cents for each square foot of glass, or $11,250,000; and double that amount when viewed from the standpoint of the retailer. It was estimated by Dr. Galloway that the retail value of cut flowers sold annually is $12,500,000; the estimated apportionment for this sum being, for Roses, $6,000,000; Carnations, $4,000,000; Violets, $750,000; Chrysanthemums, $500,000; miscellaneous flowers, including Lilies, &c., $1,250,000. The retail value of the plants sold is placed at $10,000,000.

To handle the business in its entirety requires probably an average of not less than one man for every 1,500 square feet of glass. Fifteen hundred square feet of glass per man may seem a low estimate, and such is the fact when considering commercial establishments of any size, says Mr. Galloway. The larger the area of glass, other things being equal, the more square feet one man can handle. As a matter of fact, some of the large Rose-growing establishments do not employ more than one man for each 10,000 square feet. The census of 1900 gives a total of 2,029 commercial nurseries—devoted to the growing of trees, shrubs, &c.—with a total acreage of 165,789, 82·9 per cent improved. The total value of the products was $10,086,136. In the same year the census shows that there were 2,421 seed farms in the United States, with sales of products valued at $826,019, from an area of 40,423¼ acres.

Large as is our own production, it was found necessary, or prudent, to import bulbs, trees, and plants, to the amount of $6,528,756 in the decade 1890-1900. Since these statistics were compiled, the number of plant and cut flower establishments has increased, and the glass area added to, probably to the extent of from 10 to 15 per cent. All this indicates a gratifyingly prosperous condition of the country, which is likely to remain some time, if no greater calamity befall us than the adoption of Andrew Carnegie's simplified spelling.

As may be readily imagined in a cosmopolitan country such as the United States, representatives of almost every European nationality are engaged in gardening, the Turk proving perhaps the only exception. While a number of older Americans also follow the florist's profession, it is one to which the younger "Yankees" do not seem to take, its demands being too exacting, and the dollars too slow in accumulating to suit the spirit of the age.

The restless, roaming character of the average Scot is proverbial, and that class designated gardeners has not escaped the national characteristic. It is but natural, therefore, that some of them should set their faces toward the West, the Land of the Free, where, as the poet puts it,

> "A man is a man
> If he's willing to toil,
> And the humblest may gather
> The fruits of the soil."

And speaking of toiling I am reminded of a passage written by the talented but irascible Cobbett (himself, by the way, at one time an American horticulturist, or at least, a horticulturist in America), as follows: "Scotchmen toil hard enough in Scotland, but when they go from home it is not to *work*, if you please. They are found in gardens, and especially in gentlemen's gardens, tying up flowers, picking dead leaves off exotics, peeping into Melon frames, publishing the banns of marriage between the 'male' and 'female' blossoms; tap, tap, tapping against a wall with a hammer that weighs half an ounce. They have backs as straight and shoulders as square as heroes of Waterloo; and who can blame them? The digging, the mowing, the carrying of loads, all the break-back and sweat-extracting work, they leave to be performed by those who have less prudence than they have. The great purpose of human art, the great end of human study, is to obtain *ease*, to throw the burden of labour from our own shoulders, and fix it on those of others."

The history of Scotch gardeners, in America at least, does not bear out Cobbett's assertion. Here they work, work hard, and through the faithful performance of that work, combined with their native ability and characteristic perseverance, very many raise themselves above the common herd. There is no branch of American horticulture or floriculture in which Scotsmen cannot be found, with the possible exception of the wholesale cut flower commission business, which claimed one solitary representative of the Land of Cakes, who is now dead. Scotsmen occupy, in the United States, the positions of head-gardeners and superintendents of estates; they are park-superintendents, cemetery-superintendents, and landscape gardeners, and two or more are curators of botanic gardens. They own and manage some of the largest seed stores in the country. They conduct extensive commercial plant and flower-growing establishments, and take a foremost place in the retail branch of the business. They are prominent in the work of horticultural societies, florists' clubs, and similar organisations throughout the land, and in every way act well their part in promoting whatever tends to the advancement of their chosen calling.

GRANT THORBURN.—The first Scotsman to carve his name on the roll of honour of American horticulture was Grant Thorburn, who founded the first seed house of New York City, and who probably was the first merchant to handle plants in a retail store way in the American metropolis. Grant Thorburn was born on February 18, 1773, in a small village, or clachan, named West Houses, near Dalkeith. His father was a nail maker, and the son also followed that trade. Grant, accompanied by his brother, sailed for America from Leith on April 13, 1794, the voyage lasting until June 16. (No ocean greyhounds in those days.) On arrival in New York, he worked at his vocation for some time, subsequently engaging in the grocery business, and it was in 1801, while he was a grocer, that he became a seed and plant dealer. This is how he tells the story, which gives us an account of the beginning of an enterprise which has since achieved an international reputation:

"About this time the ladies of New York were beginning to show their taste for flowers, and it was customary to sell the empty flower pots in the grocery stores; these articles also comprised part of my stock. In the fall of the year, when the plants wanted shifting preparatory to their being placed in the parlour, I was often asked for pots of a handsomer quality or better make. All at once it came into my mind to take and paint some of my common flower pots with green varnish paint, thinking it would better suit the taste of the ladies than the common brickbat coloured ones. I painted two and exposed them in front of my window. . . They soon drew attention, and were sold. I painted six pair; they soon went the same way. Being thus encouraged I continued painting and selling to good advantage; this was in the fall of 1802. One day in the month of April following I observed a man for the first time selling flower-plants in the Fly Market, which then stood in the foot of Maiden Lane. As I carelessly passed along I took a leaf, and, rubbing it between my fingers and thumb, asked him what was the name of it. He answered a Rose-Geranium. This, as far as I can recollect, was the first time I ever heard that there was a Geranium in the world; as, before this, I had no taste for, nor paid any attention to, plants. I looked for a few minutes at the plant, thought it had a pleasant smell, and that it would look well if removed into one of my green flower pots to stand on my counter to draw attention. Next day someone fancied and purchased plant and pot. Next day I went, when the market was nearly over, judging the man would sell cheaper rather than have the trouble of carrying them over the river, as he lived at Brooklyn, and in those days there was neither steam nor horse boats. Accordingly I purchased two plants, and having

sold them I began to think something might be done this way; and so I continued to go at the close of the market, and always bargained for the unsold plants. The thing being a novelty began to draw attention, people carrying their country friends to see the curiosities of the city would step in to see my plants. Then they would ask of I had no seed of such plants; then again, others would ask for Cabbage, Turnip or Radish seed, etc. These frequent enquiries at length set me to thinking that if I could get seeds I should be able to sell them; but here lay the difficulty, as no one sold seed in New York, not one of the farmers or gardeners saved more than they wanted for their own use, there being no market for an overplus. In this dilemma I told my situation to George Inglis (also a Scotchman), the man from whom I had always bought the plants in the Fly Market. He said he was now raising seeds with the intention of selling them next spring along with his plants in the market, but if I would take his seeds he would quit the market and stay at home and raise plants and seeds for me to sell. A bargain was immediately struck. I purchased his stock of seeds, amounting to $15, and thus commenced a business on September 17, 1805, that already is the most extensive of the sort in the United States."

Grant Thorburn died in New Haven, Conn., January 21, 1863. The business he founded a century ago continues in New York, and his patronymic is still associated with it.

DAVID HOSACK.—Leaving the practical side of American horticulture for a moment, let us turn to its early scientific aspect. It was to a native Scotsman (or the son of a Scotsman born in America: authorities differ as to his birthplace) that New York City owes its first botanical garden, which was founded in 1801 by Dr. David Hosack, a man of great learning, and during his life a patron of every movement in art, science, and literature. While professor of botany at Columbia Cottage, New York, Dr. Hosack purchased from the city the land he transformed into what he called "The Elgin Botanical Garden," in memory of his father's birthplace, Elgin, Morayshire. The garden was sold in 1810 to the State of New York for $73,000. It was in turn committed to the Regents of the University of New York, the Faculty of the College of Physicians and Surgeons, and, finally, to Columbia College, which latter body by an arrangement with the State Legislature in 1816, annexed the garden, which by that time had been allowed to fall into decay. Dr. Hosack's memory is preserved in the genus Hosackia, which includes some 16 species of plants belonging to the Leguminosæ family. His *Hortus Elginensis*, printed in 1807, gives the names of 2,000 species which his botanical garden contained. It may not be without interest to state that two of the doctor's former students became celebrated in the scientific world, namely, Dr. Torrey and Professor Asa Gray.

DAVID DOUGLAS.—Though not resident in the United States, reference to the work of that illfated, intrepid plant discoverer, David Douglas, for American horticulture, should not be omitted. He explored California, Oregon, and British Columbia in 1823 and 1829. He found and described some of the wild bulb gardens of the Pacific Coast in 1827-1833, and sent bulbs of many species to England. He was a native of Scone, Perthshire, and perished in the Hawaiian Islands at the age of 34, by falling into a pit made for the capture of wild animals.

THOMAS HOGG.—Among early American horticulturists after Thorburn, probably no man was better known than Thomas Hogg, senr. He was born at Polwarth, Berwickshire, on February 20, 1778. He was first apprenticed as a printer on the *Liverpool Mercury*. Going to Edinburgh, his taste for horticulture induced him to enter Dickson's nurseries at Hawick. Thence he went to London, engaging with Lee & Kennedy, of Hammersmith, subsequently taking charge of the famous gardens of William Kent, where he became acquainted with the foremost horticulturists of the day. His health becoming impaired, he was advised by his physician to take a sea voyage. He arrived in New York in 1821 with the intention of going to Canada, but was prevailed upon by Dr. Hosack to stay in New York. Here he began business in 1822. The country being then young, he found great difficulty in disposing of the plants he cultivated; the taste of the people had not yet been educated. A story is told of how Yankee enterprise came to Mr. Hogg's assistance on one occasion. He had a large batch of Pelargoniums which were then just being raised from the native species into the beautiful varieties we now have. These he could not sell in the ordinary way, so an editor friend of his suggested to him to dispose of the plants at auction. Mr. Hogg saw the auctioneer, who was to conduct a sale of dry goods shortly, and that individual was agreeable to the plan being tried. So he announced in the catalogue that there would be "auctioned off Pelargoniums—a new and beautiful article." The plants were kept from sight in an upper floor of the auctioneer's store, and when all the dry goods had been sold, the public were invited upstairs. Thither they flocked, expecting to see what they thought an entirely new article in women's wear, only to find a grand array of Pelargoniums. They accepted the situation, overlooked the trick that had been played on them, and bought up all the plants, Hogg realising double what he would have sold them for through the usual channels of trade. When Don and Douglas were sent out to this country to collect American plants, they were recommended to the charge of Thomas Hogg. Among the plants which he was the means of introducing into England from the United States was the Rhododendron arboreum [?]. He introduced into America the Primula sinensis and Wistaria sinensis. It is said that he was the first to cultivate successfully Nelumbium speciosum and Nymphæa cærulea. He was a successful grower of New Holland plants, and had one of the choicest collections of Cactaceæ in America. The late Thomas Hogg, junr., his son, also was a noted horticulturist and Oriental traveller, introducing many Japanese plants into this country, among them the Hydrangea which bears his name.

ROBERT BUIST.—Robert Buist, a florist, seedsman, and author, was born at Cupar, Fife, November 14, 1805, and died in Philadelphia, July 13, 1880. He received his early training at the Edinburgh Botanical Garden, and came to America in 1828. After working for two years as a gardener, he entered into partnership with Hibbert, whose florist-establishment was one of the first notable ones in Philadelphia. Mr. Buist became a noted grower of Roses. He also greatly improved the Verbena. He introduced Poinsettia pulcherrima into the trade, and his sale of the double form is said to have been the first transaction of the kind accomplished by ocean telegraph. He was the author of several books on horticulture, among them the *American Flower Garden Directory*, the *Rose Manual*, and the *Family Kitchen Gardener*, all of which enjoyed a considerable sale for many years. The seed business he founded in Philadelphia still bears his name.

JOHN SHERWOOD.—Another Scotsman who added his quota of new plants was John Sherwood, of Philadelphia, Pa., a grower of Roses and Camellias. He originated Sherwood's Musk Cluster, a popular Noisette Rose, and Camellias Sherwoodii and Mrs. Cope. He died in 1883 in his 77th year. The late Professor Thomas Meehan said of him: "To have an hour with Sherwood was always regarded as better than medicine, and possibly few have ever passed from gardening circles in Philadelphia more sincerely esteemed." Mr. Sherwood was one of the oldest supporters of the Pennsylvania Horticultural Society.

PETER MACKENZIE, a noted Scotsman, resident in Philadelphia, was at one time gardener to Henry Pratt, of Lemon Hill, where in 1836 he successfully grew the Poinsettia. He entered the commercial florist business about 1842, and became well known as an importer of new and rare plants. He conducted an extensive business, shipping south before the Civil War such plants as Camellias, Azaleas, Daphnes, Olea fragrans, Gardenias, and other hard-wooded stock adapted to the southern climate. He raised the famous Camellia Jenny Lind, which was sold to a London purchaser for 200 guineas.

Contemporary with Mackenzie as another noted Philadelphia plantsman was ANDREW DRYBURGH, who made a fortune growing Camellia japonica for its flowers, which at that time (1842) were in great demand. He had the finest and largest collection of specimen plants in the United States, and probably has never been equalled as a cultivator of Camellias anywhere.

DAVID FERGUSON, who died snddenly in 188[illegible], was best known as an importer and grower of new and rare plants. He established the Laurel Hill Nurseries about 1842, and introduced many novelties from all sources in this country. His great specialty was Acacia pubescens, the propagation of which he understood thoroughly, distributing many thousands. It is still in demand as a decorative plant, but cannot be procured in quantity.

JAMES RITCHIE, a worthy Scot, resident of Philadelphia, was a member of the firm of Ritchie & Dick, who excelled in growing Camellias, Roses, and Azaleas. He contributed a number of articles on steam-heating of greenhouses, which commanded considerable attention; much of the wonderful progress in that department of greenhouse accessories is the result of the interest his papers created. Mr. Ritchie, who was one of the leading members of the Pennsylvania Horticultural Society, and who served with Professor Thomas Meehan for six years in the City Council Chamber of Philadelphia, died from suffocation from coal gas, March 11, 1885, in his 77th year.

ISAAC BUCHANAN (1808-1893) was a native of Cardross, Perthshire, and at one time a leader in horticulture in the Eastern States of America. He received the rudiments of his training as a gardener at the Duke of Montrose's famous seat, Buchanan House. Later he was gardener at Cramond Castle, near Edinburgh, and Caprington Castle, near Kilmarnock, and subsequently worked in the Edinburgh Botanical Gardens under the late Wm. McNab; also at Chiswick. He came to America in 1836, first securing employment with his countryman, Robert Buist, of Philadelphia, ultimately managing on his own account a store in New York City and a growing establishment at Astoria, Long Island. Buchanan in his younger days was an Orchid collector, and for many years was the only successful grower of Orchids in the United States. He was one of the first to grow Gladiolus in this country, and considerably improved that flower by cross-fertilisation. He raised Hyacinths on the low, marshy ground in Astoria, propagating them in the same manner as that adopted by the Dutch growers. He also improved the Petunia. The common, coarse-growing, white-flowered Brazilian species had been cultivated for several years previous to 1830, when the more delicate P. violacea was introduced from Argentina. Isaac Buchanan hybridised these two species and produced mottled and striped seedlings, the foundation of the magnificent varieties now so widely grown.

JOHN SPALDING, a native of Woodside, Perthshire, came to this country as a private gardener, and later entered the florist business, in which he became successful, conducting an establishment at New London, Conn., from which more than one of our present day prominent commercial florists have graduated. Mr. Spalding's ancestors received a grant of the lands of Ashantilly, Perthshire, from Robert the Bruce, for services rendered that monarch. Before coming to America Mr. Spalding served with his father, a famous Scotch gardener in his day; also in the Botanical Gardens of Dublin, Ireland, and on several estates in England. His mind was a literal store-house of history, poetry, botany, geology, and entomology. He died in February, 1905, at the advanced age of 91 years.

JOHN DICK (1815-1903) was a native of Edinburgh. He had a growing establishment at Philadelphia, excelling in the cultivation of Camellias and hardy Roses.

JOHN NISBET (1816-1886), a native of St. Mary's Isle, Kirkcudbright, achieved success as a landscape gardener, laying out several estates in Rhode Island and Massachusetts. For 14 years most of his spare time was given freely as a moral instructor in the State prison.

ROBERT REID, who started what was probably the first retail flower store proper in New York City, was a native of Langholm, Dumfriesshire. He enjoyed the friendship of Dr. Lindley, Donald Beaton, George Glenny, and other eminent horticulturists of the time, and was a frequent contributor to the *Gardeners' Chronicle*. He died in 1863.

(To be continued.)

NEW INVENTIONS.

A RUBBER BUTTON-HOLE HOLDER.

Rubber is now used for very many purposes, and one of the latest uses to which it has been put is for the making of little holders in which the stalks of flowers used for button-holes are sometimes inserted in a little water, and hidden beneath the lappel of the coat. These rubber holders are pliable and secure when in the coat, and the stem of the flower is clasped securely by the rubber cup, which in a great measure prevents the water from escaping. The patentee is Mr. W. J. Tuley, Terrace Walk, Bath.

NURSERY NOTES.

MESSRS. W. CUTBUSH & SON.

ORIGINALLY established at Highgate, now hemmed in by houses on almost all sides, the firm has in its possession two branch nurseries at Barnet, which I had an opportunity of visiting recently. In the one nearer to the centre of this small town are the dwellings of the manager, the offices and seedshop, and a number of old and new glasshouses for the cultivation of plants in pots, and a considerable amount of land which is under trees and shrubs, climbing plants, including many Roses of the Rambler class, as likewise Marechal Niel, W. A. Richardson, Gloire de Dijon, Wichuraiana, Dorothy Perkins, and others, all rather remarkable for the exuberance and ripe condition of their shoots. These Roses were under cultivation in large pots, and standing out-of-doors, preparatory to their removal to winter quarters. The stock of climbing varieties is a particularly large one. Polyantha Roses in red, pink and white, were abundant, and I may mention such dwarf varieties as Mrs. Cutbush, free flowering and pink-coloured, the tint being very near to that of Dorothy Perkins; La Paquerette, white, and Hiawatha, a single-flowered, beautiful Rose. Tea Roses growing in pots were gone or going fast out of bloom, and the varieties are choice and many. The variety G. Nabonnand was still in fine flowering condition

In the houses there were observed capital plants of Heath, just such as find a ready sale for placing in vases and jardinières, namely Erica hyemalis, E. persoluta alba, E. Cavendishi, and E. ventricosa. Two long houses were filled with Tea Roses in pots, and Chrysanthemums for affording cut blooms chiefly.

In an old glasshouse, used as a warm greenhouse or stove, many plants of Bougainvillea glabra, Stephanotis grandiflora, Manettia bicolor, Clerodendron Thompsoni and Bouvardias were noted. Another glasshouse contained Cyclamens —such varieties as grandiflora alba, Crimson King, Mount Blanc, and Princess of Wales. The plants of Aralia gracillima, in this house, arrested attention by reason of their healthy appearance and symmetry, and the now rare Leschenaultia biloba major was observed in a few examples, in better condition than it is usually found in London nurseries. Plunged in the soil, in pots, were numbers of Honeysuckles, Clematis, Vitis purpurea, V. Coignetiæ, Ceanothus, and various plants for forcing.

In the open ground I remarked Escallonia macrantha with fine healthy growth. Actinidia polygama, A. arguta, a plant having beautiful yellow foliage at this season, Ampelopsis heterophylla, A. dissecta, A. Engelmanni, Rhus radicans, Akebia quinata, Bignonia radicans, Clematis flammula, C. montana and Calycanthus floridus, which last has produced its deliciously fragrant blooms in abundance this year. Polygonum Baldschuanicum has been equally floriferous, and its seeds have ripened. Pyrus japonica and P. j. candida have also flowered freely. There were noted numerous specimen Conifers in variety, likewise nice symmetrically-shaped green and variegated leafed Hollies.

The Wood Street nursery at Barnet, distant about a quarter of a mile from the other, contains quarters for fruit trees, clean, vigorous specimens, many Hollies of a large size in fine condition for planting, some good specimen Conifers of planting size, such as Abies Pinsapo, Thuias of several species, Cedrus atlantica, and general nursery stock, (including Clerodendron trichotomum), Cytisus purpureus australis, Rhus Osbecki, whose bold compound leaves are most attractive at this season, and Buddleias in variety. To judge from the exposed site of the Wood Street nursery, on a steep slope of rather heavy soil, I should think that plants taken out of it and planted in exposed gardens, could scarcely fail to give satisfaction under good treatment. *F. M.*

NEW OR NOTEWORTHY PLANTS.

CEROPEGIA HYBRIDA,

N. E. Brown (a new natural hybrid), and

C. SIMILIS, N. E. Brown (n. sp.).

THE Asclepiads, in their remarkable structure, stand apart from all other Dicotyledonous orders in the same manner that Orchids do among Monocotyledons; in both the pollen is agglutinated into waxy masses, and in both there is a complicated provision for the removal of the pollen-masses by insects in a way that no other plants possess, but of the two orders the Asclepiads are undoubtedly the most complicated, and whilst there are a few Orchids that are or may be fertilised without the aid of insects, there is no Asclepiad known to me that can possibly be naturally fertilised by any other than insect agency. As it is therefore an order entirely dependent upon insects for perpetuation by seed, it is not surprising that natural hybrids should occur in it, as among Orchids. In the course of many years' study of Asclepiads, during which I have dissected and examined several thousand flowers, the conviction has been forced upon me that a large percentage of species and some genera have almost certainly originated as natural hybrids, but the Ceropegia here described is the first instance that has come to my knowledge where the hybrid origin can be considered proven. *C. hybrida* has been brought to my notice by Mr. W. Ledger, of Wimbledon, who is an enthusiastic cultivator of the species of this curious genus. Mr. Ledger informs me that he raised the plant from seeds sent to him by Mr. E. Th. Witte, the Inspector of the Botanic Garden at Leiden, who, in reply to questions asked by Mr. Ledger as to the origin of the plant, writes as follows:—

"The case with the Ceropegia you wrote me about is very curious. I grow here Ceropegia Sandersonii, Decne, figured in the *Botanical Magazine*, tab. 5792, fig. 145, and I intended to send you seeds of that species. I collected the seedpod myself, so I am quite sure it came from the right plant. A part of the seeds I sent to you, and another part I sowed myself. The plants I raised are also quite distinct from the mother plant, and I expect they will be the same as yours. At the same time with *C. Sandersonii* flowered *C. Thwaitesii* (not the true plant, but *C. similis* described below, N. E. B.), and because the flowers of my seedlings are something like those of this species, but much larger, I presume they are hybrids of *C. Thwaitesii* ♂ and *C. Sandersonii* ♀. The mother plant must have been fructified by insects, for no artificial fructification was done. I send you some flowers of it, and also of *C. Thwaitesii*," fig. 146.

FIG. 145.—CEROPEGIA SANDERSONII, ONE OF THE PARENTS OF *C. HYBRIDA*. ♂.

I do not know if Ceropegias can be successfully hybridised artificially, but it would at least be a difficult and delicate operation; indeed, the artificial fertilisation of Orchids is as child's play compared to the artificial fertilisation of any Asclepiad, and in the present case there cannot be any suspicion that the hybrid was so produced. The mother parent, *C. Sandersonii*, is represented by Fig. 145, and is also figured in the *Botanical Magazine*, t. 5792. It is well known to lovers of succulent plant, and always attracts attention by reason of the remarkable form of its flowers, which are of a pleasing pale green, spotted with darker green. The male parent (which proves not to be *C. Thwaitesii*) is represented by Fig. 147, which I have drawn from specimens sent by Mr. Witte, and the hybrid by Fig. 148, from which it will be seen that in the stem and corona it more nearly resembles *C. Sandersonii*, the leaves being much smaller than those of either parent, whilst the flower, although

much larger, is more akin to that of the male parent than to C. Sandersonii; this I have drawn from a flower sent by Mr. Witte, and a plant communicated to Kew by Mr. Ledger.

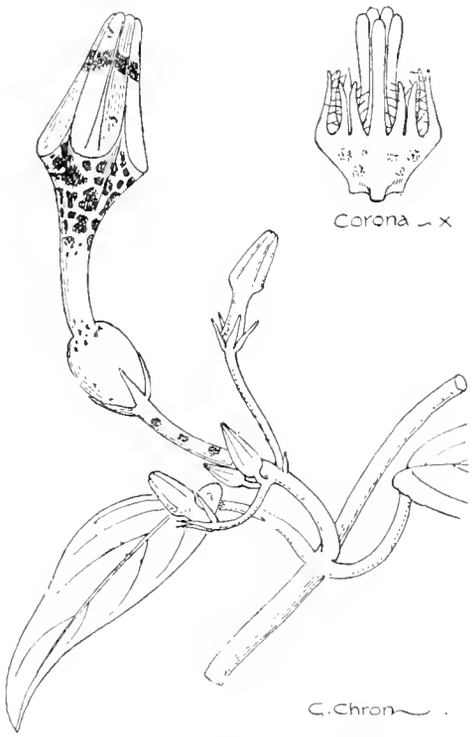


FIG. 146.—CEROPEGIA THWAITESII

The female parent (C. Sandersonii) is a native of South Africa, whilst the male parent (C. similis), judging from its relationship to C. Thwaitesii, is probably from tropical Asia, a difference of origin that adds interest to the parentage of the hybrid. The following are descriptions of the male parent and the hybrid.

CEROPEGIA SIMILIS, N. E. Brown (n. sp.).* Fig. 147.

This plant is cultivated at Kew, at Ledeb, and by Mr. Ledger, and probably elsewhere as C. Thwaitesii; but it differs from that species in the much shorter corolla-lobes, which are white or pale greenish at the basal part instead of yellow, and by the presence of cilia upon them; also in the segments of the outer corona being equally spaced instead of being arranged in contiguous pairs as they are in the true C. Thwaitesii, of which a copy of the original figure of the flower is here given (Fig. 146) for comparison. As stated above, C. similis is the male parent of C. hybrida, and the following description is made from the specimens sent by Mr. Witte.

Stem twining, rather slender, glabrous; leaves thin in texture, with a petiole ½ inch to ¾ inch long, and a blade 1 inch to 2 inches long by ½ inch to 1 inch broad, ovate or ovate-lanceolate, more or less acuminate, rounded at the base, glabrous on both sides, when young bronzy-green, becoming rich deep green, with a velvety sheen, sometimes changing to red when old. Peduncles lateral at the nodes, up to about ½ inch long, glabrous, bearing two to five flowers, which open in succession. Pedicels 5 to 7 lin. long, glabrous. Sepals, 2 lin. long, ½ lin. broad, lanceolate-subulate, glabrous. Corolla (not following the curve), 1¼ inch long; tube curved above the ovoid-inflated basal part, funnel-shaped at the mouth, glabrous outside, pale green on the inflated base, greyish-green, shading into whitish above, and at the funnel-shaped part spotted with purple-brown; inside glabrous, with the exception of a ring of fine white curly hairs at the top of the inflated part, which is light green lined and dotted with dark purple-brown; the middle part is blackish-purple, shading above into whitish or pale greenish, dusted and veined with purple; lobes 3½ to 4½ lin. long, erect, with connate tips, closely replicate and 1¼ lin. broad at the base; viewed sideways, ovate when spread out, white or pale greenish at the basal half, very dark or dull green on the apical part, with a narrow blackish or dark purple-brown band separating the two colours, fringed on the margins with long, jointed, purple hairs. Outer corona divided into 10 equidistant subulate teeth ¾ lin. long, yellow, edged with purple, and entirely yellow on the basal united part, sparsely ciliate. Inner coronal-lobes about 1 lin. long, connivent-erect, blackish-purple at the basal part, yellowish or buff-tinted above. Native country unknown. As shown by my drawings, the lobes of the corolla vary somewhat in form, both flowers of Fig. 147 being from the same plant.

CEROPEGIA HYBRIDA, N. E. Brown (new hybrid), Fig. 148.

A new hybrid, as detailed above, from C. Sandersonii, fertilised by C. similis. Stems fleshy, 2 to 2½ lin. thick, glabrous. Leaves very small, 2 to 4 lin. long, 1½ to 2½ lin. broad, thick and fleshy, ovate, acuminate, glabrous, green. Corolla curved and not following the curve 2¼ inches long; tube inflated, oblong at the base, narrowed and cylindric above, broadly funnel-shaped and 9 to 10 lin. in diameter at the mouth, outside glabrous, green at the base, light olive-green above, and the funnel-shaped part white, marked with five broad, dull green stripes, alternating with five series of connected purple-brown spots; inside with a pubescent band at the base and one above the inflated part, the narrow part glabrous, and the funnel-shaped part and basal half of the lobes pubescent; the very base is creamy, the rest of the inflated part is dull green, above which it is light purple shading upwards into pale greenish-white, with the outside markings showing through; lobes ⅔ inch long, erect, cohering at the tips, closely replicate, ¼ inch broad viewed sideways, somewhat spatulate-obovate and emarginate at the apex when spread out, glabrous and dull green, spotted with darker green or brownish on the back, the inner face pubescent and pale greenish-white on the basal half, the upper half being glabrous and rich purple-black, with a velvety sheen, the margins are thinly ciliate with light purple hairs. Outer corona ¼ lin. long, cup-shaped, with five obscure, minutely bifid lobes, pale yellowish margined with dark purple-brown; inner coronal-lobes 1¼ lin. long, connivent-erect, with re-curved tips, pale yellow, with the basal part dark purple-brown and dorsally connected to the outer corona. *N. E. Brown.*

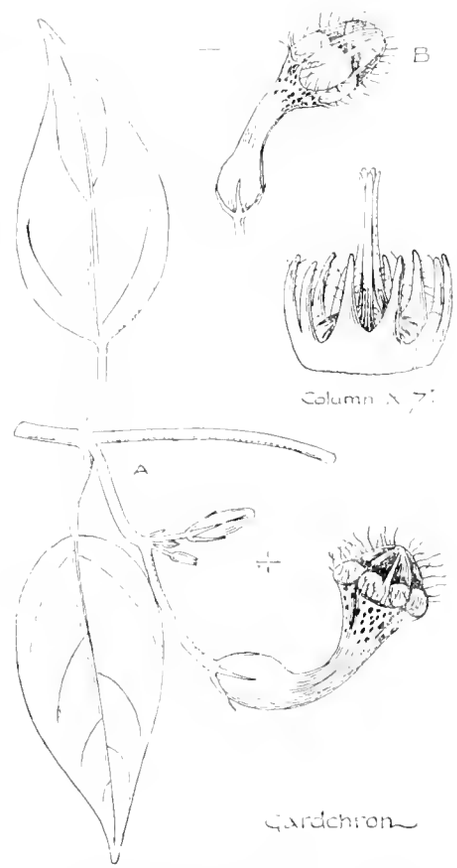


FIG. 147.—CEROPEGIA SIMILIS, A NEW SPECIES
A, portion of the stem with leaves and flowers; B, detached flower.

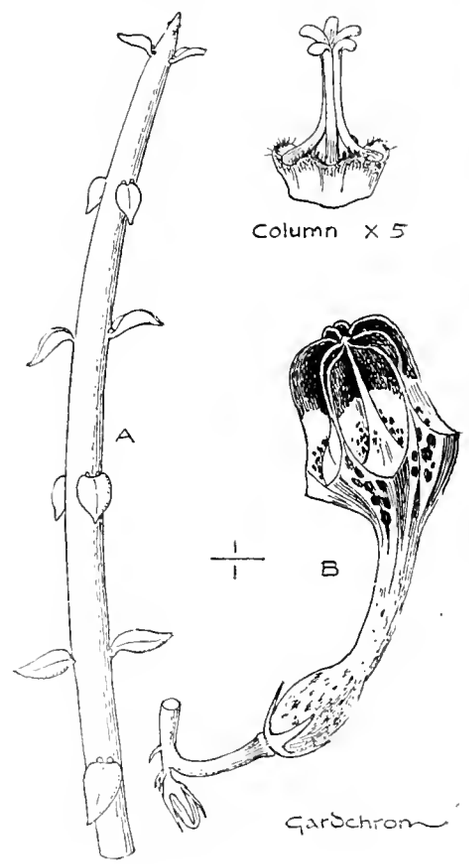


FIG. 148.—CEROPEGIA HYBRIDA ×.
A, portion of the stem of a young plant; B, flower; C, corona enlarged.

COLONIAL NOTE.

FRUIT-GROWING IN BRITISH COLUMBIA.

THE following is an extract from a letter received by a lady from her brother, who is in business in British Columbia:—"Thank you for the *Gardeners' Chronicle* just received. The article on fruit-growing in Canada by Mr. Miller is very good. I take it that Mr. Miller has never visited the south-east of British Columbia—that is, this district and Kootenay generally. I don't know Mr. St. Barbe, of Nelson, but what he says is right—only he does not go far enough. If you read the article in the *Gardeners' Chronicle* again, you will remember he said that to a man with not less than £350 or £400, the Kootenay is an ideal place for settlement; also that with this amount he could buy 20 acres of the very best land and build himself a house on it. I should think so too. Many a man has started who never had a

* Ceropegia similis, N.E.Br.; ad C. Thwaitesii arctissime, caule foliis floribusque persimilis; sed floribus minoribus, corollæ lobis brevioribus et ciliatis, coronæ lobulis 5 equidistantibus differt.

quarter of £350 as capital; £350 is $1,750, which is a big sum out here, calculated by men who work for their living. Another thing, good land can be bought for far less an amount than Mr. St. Barbe says—unless he means land which has been improved, which is a very different proposition. Again, 10 acres will be enough to yield a good living to one man and his family. Twenty acres is all right, but, as the writer says, better too little than too much. One thing he should have mentioned which he did not, is that all fruit lands in this part of British Columbia are covered with timber and brush; such, I think, is not generally known. Some have valuable timber upon them—trees up to 150 feet in height, logs of which are worth $5 to $7 per 1,000 feet. What I want to make clear is that all lands require clearing. The cost varies from about $30 to $60 per acre, according to the amount and size of timber thereon. I notice there are dozens of gardeners advertising for situations in this issue of *Gardeners' Chronicle*. It is a pity the advantages this country offers cannot be brought to their notice, for they are just the men who would do well out here. Eight out of every ten of the men who take up fruit-growing here do not know the faintest thing about it, or, at the best, are merely amateurs, but they can make a do of it.—*Frank Lidgate, Sloan City, British Columbia, November 12, 1906.*

THE UPSALA BOTANIC GARDENS.

FROM its association with the great Linnæus, this garden has a special interest for all connected with horticulture or botany. We are glad of this opportunity of publishing a communication from this venerated spot, the more so as it relates to a very interesting plant originally described by the great naturalist himself:—

"In the Upsala Botanic Gardens there has flowered, these last few years, a rather remarkable plant, the Pedicularis sceptrum Carolinum. This plant is seldom met with in gardens, as it requires special treatment. I think your readers would like to see a photograph of it (Fig. 149). The plant, when flowering, is about 2 feet high, and its erect habit and the stately mass of its yellow and purple-coloured flowers make it a great attraction in our out-door collection of plants from swamps and moist situations. In the place prepared here for the purpose it grows vigorously beside Pinguicula vulgaris and alpina, Parnassia palustris, Narthecium ossifragum, different species of Sphagnum, Eriophorum alpinum and other species of the same genus, Orchids, Drosera rotundifolia and intermedia, Vaccinium and Oxycoccos species, Sedum, and others. As a subscriber and an interested reader of the *Gardeners' Chronicle* I hope the photo will be found suitable for reproduction.—*Iwan Ostendahl, Garden Inspector.*"

FIG. 149.—PEDICULARIS SCEPTRUM CAROLINUM GROWING IN LINNÆUS' GARDEN.

ORCHID NOTES AND GLEANINGS.

CATASETUM LAMINATUM.

A FINE plant of this singular Mexican species is in flower in the collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), the plant having two spikes of seven and nine flowers respectively. The most singular feature in the flower is the ridge-like, serrate blade nearly half an inch high, which extends up the middle of the labellum and causes insects to walk round the narrow path at its base formed by the upturned margin of the lip; the cirrhi of the rostellum are placed over the opening to the nectary, and to reach it the insect must cause the ejection of the pollinia. The petals are lanceolate, 2 inches long and ½ inch wide, the petals similar, but half an inch wide, and arranged forward over the column. The sepals are greenish white, densely spotted with red, and the petals whitish, with fewer and larger spots. The labellum, which is three-quarters of an inch wide and 2 inches long, has an upturned ciliate margin, a raised plate, nearly half an inch high, and uneven at the top, running down the centre, the ridge being forked at the entrance of the spur, which is short, obtuse, and compressed. The lip is greenish at the margin, the blade down the middle being ivory white with purple spots. It is a rare and singular species of considerable beauty.

CYPRIPEDIUM RECORD.

THE Earl of Tankerville, at Chillingham Castle has succeeded in flowering a Cypripedium, the result of crossing C. Leeanum Clinkaberryanum and C. insigne "Harefield Hall" in eighteen months from seeds. Mr. Hunter, the head gardener at Chillingham Castle, sends the record: "Sown May, 1905; flowered November, 1906," and states that there can be no doubt about the identity of the fine hybrid just flowered, as but few were sown before that date, and none which could be confounded with the cross in question. Another plant of the same batch is about to flower, and it will probably be shown at a meeting of the Royal Horticultural Society. The first to flower would have been shown but for the bloom sustaining an accident.

THE ALPINE GARDEN.

ANEMONE APENNINA AND ITS VARIETIES.

Now that planting time is with us, it may be desirable to draw the attention of admirers of the Apennine Windflower to the double variety of Anemone apennina, for, although there are few persons who would prefer it to the single form, it has many beauties, apart from its interest botanically. It originated in the nurseries of Mr. C. G. Van Tubergen, junr., at Zwanenburgh, Haarlem, and was distributed by the raiser in the autumn of 1905, and it flowered in this country in the following spring. Mr. W. E. Gumbleton sent me flowers before my own plant came into bloom, and I was pleased to see that it was, as announced, quite double. The sepals are narrow and of a pale lilac-blue shade. One feels a little disappointed that this variety has not the fine blue colour of some of the best varieties of A. apennina, still, the probabilities of securing a double deep-blue variety of this flower are quite within bounds. Mr. Van Tubergen informs me that he has also raised a very pretty double white variety, but as this increases very slowly, it is not yet ready for distribution. Still another variety has been introduced by Mr. Tubergen, and this is in point of colour remarkably fine. It is A. apennina purpurea, a name which scarcely describes the intense purple colour of the blooms. It has given me even more pleasure than the double variety: its brilliant purple flowers were exceedingly fine in my rock-garden last spring. The flowers are single, and they promise to be among the most valuable of all the varieties of A. apennina, which is a plant so variable in colouring that one is confident careful selection would soon give us many more beautiful varieties.—*S. Arnott, Sunnymead, Dumfries.*

A GLIMPSE AT THE GLOUCESTERSHIRE GARDEN.

IN the month of July I was enabled to pay a flying visit to Canon Ellacombe's delightful garden at Bitton Vicarage, Gloucestershire; but the time at my disposal was unfortunately too limited to allow of more than a casual glance at the treasures it contained. The following notes, therefore, do not profess to do more than draw attention to a few of the interesting plants viewed during an all too brief tour of the grounds. What was equally remarkable to one who is well acquainted with gardens in the south-west, where, in the genial atmosphere, numbers of tender subjects flourish to perfection, was the wonderful health of many of the same plants in the far more severe climate of Bitton. During Canon Ellacombe's and his father's lifetime love and care have been increasingly lavished on the vicarage garden, so that, at the present, it contains an almost unrivalled collection of rare and noteworthy plants. Of Roses there is a very full list, almost every known species being represented, while of the scarce, double-yellow, Rosa hemispherica, which it has been found impossible to strike from cuttings, there is a fine plant against a wall. A large assortment of Hollies is to be found in the gardens, a prostrate form of the variegated Holly being 19 yards in circumference and 6 feet in height at its tallest point. Ilex cornuta had formed a handsome shrub, and I. latispina minor was also pointed out. The Berberis and Box genera were largely in evidence, and of the former B. angulosa, B. congestiflora, B. Fortunei, and B. umbellata were noted. Cotoneasters were also largely cultivated, C. congesta, C. depressa, C. Hookeri, and C. pannosa being viewed amongst others; and of Hydrangeas, H. platanifolia, H. quercifolia, and H. vestita. Amongst Elders were Sambucus canadensis, the variegated and the cut-leaved forms, and an uncommon shrub was the nettle-leaved Filbert. The lawn is beautified by several fine trees, amongst which may be mentioned a noble Cedar of Lebanon, the Maidenhair tree, Ginkgo biloba, between 60 feet and 70 feet in height; a fine Fern-leaved Beech, Catalpa bignonoides, Parrotia persica, Kolreuteria paniculata, 35 feet in height, Juglans rupestris, with very handsome foliage; Oreodaphne californica, 25 feet high, and many others. Amongst the collection of noteworthy subjects were Abelia floribunda, Abutilon vitifolium, which succeeds so well in the south-west, in perfect health here as at Chepstow [and Dover]; the climbing Adlumia cirrosa, with Maidenhair-like foliage and rose-coloured flowers; Amorpha canescens, Artemisia tridentata, Azara integrifolia, the rarely seen Campanula punctata, a supplementary illustration of which appeared on August 26, 1905; and the alpine C. Thomasiana, Calycanthus occidentalis, growing finely; Calceolaria alba, a large bush of the rare Cistus ladaniferus maculatus, 6 feet in height, for which C. cyprius is so often substituted, and a smaller one of the almost unprocurable white type. Clematis recta in a bog bed was unusually fine, being a mass of flower 5 feet in height, and as much through; C. coccinea, C. Durandi, and C. Sieboldi were also doing well in other parts of the garden. Clerodendron trichotomum was just coming into flower, and the Himalayan Plumed Thistle, Cnicus Falconeri, held numbers of inebriated bees in its expanded blossoms. Tricuspidaria lanceolata, better known as Crinodendron Hookerianum, was very healthy, as, amongst the Crinums, was C. Moorei variegatum, while the same was to be said of the New Zealand Coprosma acerosa. Coriaria terminalis was bearing its bright orange berries freely, and Corydalis glauca its pretty pink and yellow flowers, while Cydonia sinensis was remarkable for producing fruits the size of a cricket ball. A mass of Daphne Blagayana, which often proves a difficult plant to grow, was 5 feet square and the picture of health, while D. Cneorum was also doing well. Deerongia clerodes and Decaisnea Fargesii were inspected, as were the pretty pale yellow Dianthus Knappi and D. superbus, 2 feet 6 inches in height. Discaria longispina was a curious shrub from New Zealand. A bed of Erica carnea was a mass of green foliage. This is always clipped with the garden shears immediately it goes out of bloom, a treatment that evidently succeeds to perfection. Erinacea pungens, with deep-blue Pea-like flowers, is seldom met with; the pale yellow Erodium chrysanthum was a pretty sight; Escallonia montevidensis (floribunda) was in good health, as was Euonymus alatus, valuable for its autumnal colouring. The much-branched Mexican shrub, Fallugia paradoxa, bears large white flowers. Genistas were represented by a mass of G. sagittalis 8 feet across, G. horrida, G. hispanica, 16 yards round, and others; Gentiana septemfida, one of the loveliest of the genus, was in full flower, and the rare Gleditschia caspica was doing well. Helianthemum ocymoides, Hypericum aureum, and H. fragile were noted. Jamesia americana, a pretty white-flowered shrub from the Rocky Mountains, rarely seen, was pointed out; Linaria dalmatica, 5 feet in height, was bright with its yellow blossoms; and the Osage Orange, Maclura aurantiaca, was evidently happy. The pretty salmon-pink flowered Malvastrum lateritium was in full bloom, and attention was directed to two rarely seen plants, Melianthus minor and Muhlenbeckia axillaris. Nandina domestica was flowering as freely as it does in Cornwall, and the Mexican Nestea salicifolia, Nierembergia filicaulis from Buenos Ayres, and Osteomeles anthyllidifolia from the Pacific Islands appeared perfectly satisfied with their surroundings. There was a large plant of the new Paeonia lutea; the pretty Perowskia atriplicifolia, 5 feet in height, was bearing its long lavender flower-sprays; Pentstemon campanulatum, both in scarlet and white varieties, was very effective; the creeping North American Pachysandra procumbens was examined, as was Phormium Hookeri, which flowers well in these gardens. Pittosporum eugenioides appeared as contented as if it was growing in Cornwall. Polygonum capitatum springs up annually from self-sown seed, while P. cymosum, P. equisetifolium, a great rarity, and P. molle variegatum are but rarely seen. Pterocarya caucasica, one of the Walnut tribe, has handsome foliage; the creeping Plum, Prunus prostrata, evidenced its peculiar habit of growth, and a very fine form of Pyrus Maulei was said to excel in the rich colouring of its fruit. Rhus cotinoides, splendid in its autumnal colouring, as is the neighbouring Euonymus alatus, R. glabra laciniata, with its beautifully-cut foliage; Rubus odoratus, much superior to R. spectabilis; R. japonicus tricolor; Rhaphiolepis ovata, with its Hawthorn-like flowers; the peerless Californian Poppy, Romneya Coulteri, perfecting the first of its great crêpe-like blossoms; Salvia Grahami; S. involucrata, the new Sophora viciifolia; Dierama (Sparaxis) pulcherrima, with its arching flower-wands, were seen and admired. Anemone sulphurea in a damp spot was very vigorous, and the variegated form of Astrantia major, seldom met with, was in flower, as was Verbena tenora Maonetti; Veronica Cookiana and V. pimeloides were noticed, as were Viburnum Mariesi and V. Awafuki; Wyethia mollis, Yucca filamentosa variegata, and the curious Zanthoxylum planispinum. Interesting as was the collection of plants already enumerated, the high walls and sheltered borders immediately beneath them held an even choicer selection of rare and tender subjects. Here Asparagus verticillatus topped the wall with vigorous growth; the North American Aristolochia tomentosa, rarely seen, was present, and Bignonia capreolata with B. grandiflora were both in the best of health. The Australian Bursaria spinosa was holding masses of small white flowers; Carpenteria californica was displaying its single white blossoms, and the rare Cæsalpinia Gilliesi was doing well, as was the New Zealand Chianthus puniceus. Here I met with Convolvulus tuguriorum, a New Zealand climber, that I only know in one other garden, which is in the neighbourhood of Truro, where it grows to a height of 25 feet over a giant Myrtle. Fremontia californica had flowered well, and Indigofera Dosua was 10 feet high against a wall, while Mandevilla suaveolens was in flower. Marsdenia erecta is seldom met with, but was a pretty object, covered with clusters of small white blossoms. Olearia insignis, the queen of the New Zealand Daisy-bushes, had flowered, but had not made much growth since my visit two years previously. Ozothamnus rosmarinifolius had evidently bloomed profusely, and against the wall the Persimmon, Diospyros Kaki, was fruiting well. Pentstemon cordifolius was red with flower, and Pistacia atlantica, from the Canary Islands, was flourishing; while Plagianthus Lyalli, covering a large space of wall, was white with countless clusters of blossoms rather past their best. The Pomegranate, Punica granatum, was bearing its vivid scarlet flowers, and Salvia leucantha was in bud. I was surprised to see this Salvia doing well in the open at Bitton, as it is a tender subject from Mexico, and is often badly cut during the winter in the south-west. Smilax laurifolius, rare in cultivation, was in good condition, and Solanum Torreyi, only about 18 inches high, was bearing a large flower-head of great, violet-blue, yellow-centred blossoms very similar to those of S. Wendlandi. The Australian Bluebell Creeper, Sollya heterophylla, was in flower, and the blue-flowered South African Thunbergia natalensis was noted, as were Trachelospermum japonicum and the better-known T. jasminoides. Veronica Hulkeana, the most lovely of the New Zealand shrubbery species, was represented, and among the many Vines, Vitis Coignetiæ, V. heterophylla humulifolia and variegata were admired. Along the edges of the paths large and representative collections of Saxifrages, Sedums, and other low-growing plants added much to the charm charms of this beautiful and most interesting garden. *S. W. Fitzherbert.*

KEW NOTES.

STERNBERGIA MACRANTHA.

BY far the largest of the autumn flowering Sternbergias, this species possesses a great disadvantage in that it frequently fails to flower after the first year. Seeing that it is widely distributed over Asia Minor from Smyrna to Western Persia, and south to Jerusalem, one would expect it to be found growing under different conditions in various localities, therefore at some times bulbs may be sent us from a certain district and flower as one could wish every year. Freshly-imported bulbs under the name of S. Clusii from Syria are flowering well, while a few flowers have been produced on bulbs planted against a south wall, and which have been there for several years. A hot, sunny position does not seem to be essential for flowering S. macrantha, as bulbs planted in a rather shady position in the rock garden produce flowers three years out of every four.

GENTIANA SCABRA.

UNDER various names, including G. Buergeri and G. Fortunei, this plant is sometimes seen in gardens, but it is still a rare plant, and seldom met with in good condition. It is one of the latest flowering of all Gentians, coming into flower during the month of November. Belonging to the group which includes our native G. pneumonanthe, it is of more robust habit, with broader leaves and large blue flowers. The throat of the flower is spotted with greenish white, and these spots are more conspicuous in some forms than in others, often spreading into the limb of the corolla. It is a native of Eastern Asia, and has been in cultivation over 60 years, having been sent by Fortune from Northern China in the year 1844. It is usually found growing in shady places on low hills, and

is figured in the *Botanical Magazine* as G. Fortunei, t. 4776.

ARTEMISIA LACTIFLORA.

THIS late flowering Artemisia formed one of the most conspicuous plants this autumn in the herbaceous ground. Of bushy habit, growing between 5 feet and 6 feet high, the stems are well clothed with elegantly-cut, dark-green foliage. The upper half is composed of freely-branching panicles of slightly fragrant white flowers, giving the plant a light and graceful appearance. A mass of it planted near the water's edge would produce a charming effect in autumn, and such a position would suit it admirably. It is not particular, however, as to soil or position, and does equally well in a somewhat dry border or bed. Like many others of the same genus, it is an easy plant to increase, and the roots may be split up into small tufts, each of which will make a good plant the following season. Commencing to flower in September, the flowers last in good condition well into November. *W. I.*

THE FERNERY.

AMERICAN FERN SPORTS.

WITH regard to the immense number of "sports" discovered in the British Isles among the indigenous wild Ferns, it has always been my opinion that the number was mainly due to the fact that for half a century a body of specialists have made a hobby of hunting for varieties, and not, as would superficially appear, to a greater tendency to "sport" in this country. Thanks partly to several contributions from my pen in this varietal connection to the "Fern Bulletin" and other publications in the United States, I have been favoured with numerous letters anent varietal "finds," and even in some cases with plants and spores all tending to show that diligent search alone is needed for the discovery of such productions. The marsh Buckler Fern (Lastrea Thelypteris), for instance, occurs in the States under precisely the same boggy and local conditions as in this country. I have hunted for this species myself among the Norfolk Broads, where it occurs in great abundance, and almost unaccompanied by other species. I was, however, unsuccessful in finding any trace of variation, and it still remains without the record of any "sport" at all on this side the Atlantic. In the States, however, a very marked and good polydactylous form was found some years ago, and a clump of rhizome was sent me by post. Naturally, I watched its development in the spring with great interest, but the first fronds which appeared were those of the Sensitive Fern, Onoclea sensibilis, and after some time a slenderer frond appeared, which developed into a quite normal one of the desired species, so that I concluded a mistake had been made. Subsequently, however, a number of typical fronds appeared, and grew to a great length, all tasselled well at all terminals, while no other normals appeared. Despite its robustness for three years, all fronds were barren, and this year I had almost given up the hope of a sowing with its selective possibilities when I noticed that a comparatively small frond on a small division separately potted in the spring appeared somewhat contracted in all parts, and on close examination I found this was due to an abundant fertility from base to apex, so that now I have the desired material in plentiful measure. Here, then, we have a distinct acquisition to our varietal lists, though not of home production. Polypodium vulgare is generally distributed in the States, and there have already been recorded varieties either like or closely akin to our P. v. cambricum, cristatum, marginatum, deltoideum, semilacerum, ramosum, and multifidum, while a recent find, P. v. Churchiæ, appears, from the description, to be distinct from any previous ones, being not only beautifully crested, but having the basal pinnæ distinctly stalked, a new feature entirely. I am indebted to Mr. B. D. Gilbert, of Clayville, N.Y., for my data, and hope to receive from him before long specimen fronds of the above forms for comparison with the British ones. The "incisum" form of Asplenium Trichomanes has been recorded as found twice, but whether the "finds" are identical with the British ones, of which at least three distinct forms exist, is unknown to me. It would in any case be very desirable to compare them. Some years ago a lady sent me fronds of a neatly tasselled Athyrium filix fœmina (Lady Fern) she had found, and this, too, was a thorough-bred, though the tassels were small. Judging, however, by American Fern literature, most of the students of these interesting plants are much in the position of our Fern students of half a century ago, in so far as they do not care to study the great capacity of the plants to vary widely and distinctly, and thus often discuss and even illustrate minor deviations such as have long since lost all interest on this side. Our own students of the epoch named had little reliable literature to guide them; the material was only then accumulating, but the student of to-day has an ample supply for reference. On the other hand, it is, of course, a fact that the area of the States is so great and its Fern flora has so recently been taken in hand, that the species themselves are quite possibly not exhausted as regards discovery, and it is possibly due to this that some of the ruling spirits over there do their utmost to discourage varietal research, and follow the old and here obsolete lines of argument, that such "variations" are merely "monstrosities," and therefore devoid of interest, and appear to consider the advocates of their study rather as "cranks" than anything else. The "crank," however, on the other hand, not infrequently comes across assertions in his special line, which his wider knowledge induces him to impute to real "cranks" rather than imagined ones. A sneer, for instance, at crested varieties as being akin to two-headed kittens or six-legged rabbits is obviously misplaced, when we consider that the Fern varieties, apart from their ornate symmetry, reproduce themselves truly through these spores, while the true monstrosities in question are mere temporary freaks happily quite incapable of transmitting their deformities to posterity. Furthermore, since the varietal forms have gained scientific attention, it has been found that the tendency to vary pervades also the reproductive systems, so that much light has been thrown upon the life-cycle and its capacity for taking short cuts in all conceivable ways, instead of following the roundabout normal routine. It has been due to such investigation that the curious analogy between the malignant cells of cancerous growths in man, and certain abnormal forms of the nucleus in the reproductive cells in Ferns was discovered by Professor Farmer, forming quite possibly a link in the chain of knowledge of that dire disease which may enable it to be suppressed or cured. In short, it is in Nature's vagaries rather than in her orthodox procedure that lessons are to be learnt regarding the underlying laws, a fact which some of our American Fern-loving cousins have evidently not yet grasped. *Chas. T. Druery, V.M.H., F.L.S.*

FOREIGN CORRESPONDENCE.

NEPENTHES.

I AM sending you four pitchers of hybrid Nepenthes raised by me at Remilly. One, N. "Panli," has received a First Class Certificate from the Société Nationale d'Horticulture de France.

The plant has not yet been pinched to make it flower, and the pitchers are still increasing in size. This is the case with another variety with green pitchers grown on the same hybrid, N. Tiveyi × N. mixta. This plant yields, as you see, large pitchers, but they are too green in colour. The other two pitchers are from plants raised by crossing N. Tiveyi × N. Morganæ. The plants are small and the pitchers are far from having attained their full development; one of them resembles that of N. Curtisii, but is redder in colour. I may add that I have now a plant of N. Curtisii (ordinary variety) in bloom. This is a female, and I have another female plant in bloom of N. Curtisii superba, but this shows the existence of a female N. Curtisii, and that the variety superba is not the female plant of that species. I have seedlings of N. Curtisii (ordinary variety) which are fairly large already; the pollen was taken from N. mixta.

I have, with much trouble, succeeded in raising some 50 seedlings from a cross between N. sanguinea × N. Northiana pulchra, but the young plants are very tender, and grow very slowly. I have, on the other hand, some 300 seedling plants, very sturdy in habit, raised from N. Curtisii superba × N. Northiana pulchra, and hope that these will grow into plants superior to N. mixta, as N. Northiana pulchra has splendid very bright red pitchers, even finer than those of the ordinary N. Northiana. N. Curtisii superba, from which the seed was gathered, has also large and well-coloured pitchers. I have many other seeds ripening, but the fine male varieties, such Burkei, Rafflesiana insignis, &c., have not flowered this year. N. ventricosa has never flowered at Remilly, and I do not know if this is a male or a female plant. *R. Jamy-Desloges, Paris.*

TROPICAL AND OTHER PLANTS.

CUBA.—Early in the coming year the undersigned will issue the first decades of prepared herbarium specimens of his sets of the economic plants of the world.

The uncertainty of the names attached to cultivated plants and to others of economic importance is proverbial. No part of systematic botany is more difficult and none more interesting and important. Current names for garden and greenhouse plants are in the utmost confusion. I specially is this true of plants originally from the tropics, many of which produce only foliage in the higher latitudes. There has been a most remarkable dissemination of plants worthy of cultivation, and this is constantly increasing, and of great numbers of these plants the botanical identity is as little known to the scientific horticulturist as to the grower.

One of the most serious obstacles to a uniform method of naming cultivated plants is the entire lack of a widely-distributed standard set of herbarium specimens, including well-prepared examples of all the species and varieties, which should be deposited in all the centres of horticultural and botanical activity. Under a uniform series of numbers these could be readily referred to alike by botanists and horticulturists the world over. The opportuneness of this publication and its vital importance to horticultural and agricultural botany do not seem capable of exaggeration.

Locally, there could not be a more favourable place than Cuba for the undertaking of such a work. Here both temperate region and tropical plants may be grown, and the extensive introductions of hundreds of years from all parts of the world, besides our own active Acclimatization Garden, will furnish much valuable material. Full series of tropical fruits, timber trees, vegetables, spices, ornamentals, rubbers, Palms in flower and fruit, and medicinal plants, will furnish items of great interest—a sort of material which it has previously been very difficult to obtain. Even the minor varieties will be fully represented, and accompanied by full notes and by prints or tracings of fruits, &c. Where possible, also, such wild plants as indicate the parentage of cultivated forms will be included.

We already have promises of active co-operation from a number of botanists and horticulturists, and all have enthusiastically commended the proposal. Some of the best-known systematists in some of the oldest gardens of the world have promised their active aid in the preparation of this series. We do not desire to sell many of the sets—exchanges only are generally solicited. A few will be sold to cover the expenses of issue, but any persons desiring the set will be able to obtain it by contributing material in quantity of a few forms for the issue. Until further notice, the preparation of sixty good, complete, well-pressed specimens of each of five species or varieties of cultivated plants will ensure the delivery of one century of the published sets. The material to be contributed by each person co-operating must be decided upon by previous correspondence.

The undersigned has been issuing sets of plants for the past 15 years, so there is promise of a really valuable contribution to the working outfit of botanists and scientific horticulturists. As this is not local work, but draws on all Floras, any change of location by the author will, fortunately, not in any way affect the publication, and he looks forward to its uninterrupted continuation for many years. Early replies are requested from all those interested. *G. F. Baker, Departamento de Botanica, Santiago, Cuba.*

FORESTRY.

TREATMENT OF PLANTATIONS WITHOUT REGULAR THINNING.

Some readers may be interested in the results of my final under-planting in my plantation of six acres.

The Beech and Silver-fir that were planted in 1893, at a distance 6 feet apart in the 20-foot cuts, have grown well. The Beech have grown faster, and have been pruned slightly, whence they overgrew the Silver-fir.

In 1897 the denser plants of the Larch plantation, between the 20-foot cuts, were thinned to about 8 feet apart between the plants, and an underplanting of Beech and Silver-fir was made.

Some cutting and some underplanting has been done each year at a cost of £7 2s. 6d., and in 1905 my son planted 400 Douglas Firs, which involved an expenditure of £7 12s. The trees were delayed in transit, and as a consequence the roots were injured, and 68 of the trees died, but these were subsequently replaced. This year we have planted 468 Douglas Firs averaging 2 feet to 2 feet 6 inches in height. They were delivered promptly, and were "heeled" in a field which had been cropped with Mangold Wurtzels, being permanently planted on November 14 and 15.

With seedling Beech, taken up in the plantation, we have planted 600 trees in three days.

The mode of treatment in former years left vistas of 12 feet in one direction and 16 feet in another. These cuts had closed in before the wider cuts were made.

In 1887 I saw Mr. McCorquodale's work in Lord Mansfield's woods, and planted a Douglas Fir among Larch and old Oak when it had bare headroom. This, though planted 30 years after the Larch, is now as tall as the latter, and nearly as large. It has no branches an inch in diameter, but forms a beautiful straight trunk. The pits were made in September, and my workman, when I set him to work, pointed out that we had missed some parts of the wood when underplanting, and a strong growth of Hazel had sprung up under the best Larch. This he cleared away, and made 496 pits with 68 failures last year, 544 to be filled. We planted the other pits with Beech and Silver-fir seedlings taken up in the plantation, and planted some more of the seedlings, making 600 trees in all. The Douglas Fir we had this year were 2 feet to 2 feet 6 inches, and some 3 feet in height, being as good trees as I ever planted.

If the Larch are cut when the Douglas Firs are 20 feet high, there will be some good patches of the latter trees at about 6 feet apart. These will probably be free from branches and will grow rapidly.

In planting I use a large stick with a blunt, rounded point, so as not to injure the roots. Trees thus planted and not trodden about their roots never become loose in the soil, and the rain, of which we have recently had plenty, can enter the soil freely. As I am 81, I cannot expect to live to see the Larch felled, and thus know the result of this interesting experiment. I noticed Douglas Fir near Porlock in Sir Thomas Acland's plantations, and elsewhere, were much branched, and had lost their tops as soon as they got above the other trees. *Henry Rogers, Plymouth.*

VEGETABLES.

HARDY KALES.

Although up to the present time moderate successes have to be recorded concerning the respective trials which have been conducted in the Wisley gardens, there is reason to believe that things will, now that the ground is getting into a better condition as the result of manuring and working, greatly improve. At the present time there is to be seen in these gardens a remarkably good trial of hardy Kales. It is one that all interested in these winter vegetables should be pleased to inspect. Although Kales are plants which, given fairly good soil and plenty of room, will very well take care of themselves, this trial is very instructive, and merits increase. The considerable breadth, including, as it does, all the best-known varieties, was seen by a few members of the Vegetable Committee at the end of September, and it was then agreed that at a later date the entire breadth should be carefully examined. That examination it is anticipated will take place during December, by which time each variety or stock should have fully developed its normal features. Some desire was expressed that not only should the test be one of excellence of stock or otherwise, but also that of hardiness. This latter test is entirely dependent on the winter. Still, it is rare that Kales suffer much in our southern winters, and thus the test may not be furnished. Generally, all Kales are fairly hardy, and after standing through so dry a summer as the last, it is not likely that plants will exhibit undue tenderness during the winter. Accepting the fact that hardiness is the general characteristic of all the varieties, the committee would therefore concern themselves chiefly with the respective merits of the stocks, as classed under the headings of tall curled Scotch, dwarf curled Scotch, Arctic curled, Cottagers', Asparagus, Buda, Chou de Milan, Tall Jersey, Hybrid curled, or other type into which Kales are divided. Generally, Kales are most valuable during hard winters, when other and more tender members of the Brassica family have succumbed to frost or are over. It is during the latter winter months that Kales become so useful and valuable, because of their relatively hardy constitution. Their "heads," after being well frosted, form tender, sweet greenfood, and their abundant stem sprouts, coming in gradually, give delicious, tender leafage for several weeks. Could time and space have been spared, a record sowing of seed of all the stocks now growing at Wisley and a further planting some six weeks later than the first one, would have furnished useful evidence of the value of successional crops of this vegetable, the later one as a rule furnishing an ample supply of sprouts up to the end of April. *A. D.*

The Week's Work.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Hardy Climbers.—At this season of the year, when planting is in full operation, and alterations in the garden are being carried out, a few reminders of suitable climbers or plants for garden-walls may not be out of place. Having already in previous notes dealt at some length on the uses of Roses in similar positions, it will be unnecessary here to repeat the names of the varieties, as they will readily occur to the intending planter, and it will suffice to remark that Roses are invaluable for the purpose.

Clematis.—In the category of climbers, Clematis are bound to take a foremost place, for there is none more diversified in growth, and in the period of flowering, or more gorgeous in bloom. The Clematis are graceful in habit, and in colour embrace almost every shade of red and blue in combination, and even include scarlet and crimson, while yellow flowering species and pure white are common. By a judicious selection of species and varieties they may be had in flower from April until frost puts an end to their blooming. In order to grow them well, at the foot of a wall, the ground should be prepared and good drainage secured, as nothing is more inimical to Clematis than wet, cold, undrained soil, which induces soft spongy growth. The soil should be a rich loam. Amongst the best of spring-flowering Clematis are the following: C. montana grandiflora, Sir Garnet Wolseley, Duke of Edinburgh, Miss Bateman, Mrs. Quilter, and the Queen. Autumn-flowering varieties are: Ville de Lyon, Nelly Moser, Mrs. George Jackman, Countess of Onslow, Coccinea, La France, C. flammula, and B. flammula rubra marginata.

Honeysuckles.—These charming and fragrant flowering plants are delightful aids for the adornment of a wall or porch, but perhaps the two best are Lonicera japonica Halliana and L. j. flexuosa. The former is particularly useful, as its deliciously sweet-scented flowers, which are borne profusely, appear in July and last until nearly Christmas, and both are vigorous growers. For gardens situated in the south and south-west, L. Hildebrandiana, which bears flowers 6 or 7 inches long, of a beautiful orange-crimson colour, with large dark, glossy leaves, should not be omitted, as also L. sempervirens, the Trumpet Honeysuckle. All the Honeysuckles are easy of culture in any soil.

Jasmines.—The ordinary hardy Jasmines, Jasminum officinale and J. nudiflorum, are too well known and their value too much appreciated to require any reminder here, but mention might be made of the new species lately introduced from China, J. primulinum, which is a decided acquisition amongst plants for walls. It flowers profusely in the summertime having large semi-double golden-coloured flowers, while its dark-green foliage is highly ornamental and is evergreen. J. humile (J. Wallichianum) is worthy of more extended cultivation, as it has a light, graceful habit, and it flowers in summer.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Spring Cabbages.—If the plants have grown strongly and now show part of their stems, draw a little soil slightly towards them to afford them some protection during hard frost. As a rule, the stems are the weakest part and should be protected. Select a dry day, when the soil is not in a pasty condition, for doing this work, or more harm than good may result.

Protection of Vegetables.—So far there have been no severe frosts, and crops have continued to grow without check. Autumn Cauliflowers have been abundant, and early varieties of Broccoli, such as Michaelmas White and Self-Protecting. All this, however, may be changed at any moment, and every effort should be put forth to save the crops immediately the change does take place by biting any that are approaching maturity and planting them in frames or outhouses. Ventilate very freely during mild weather all frames containing vegetables. Parsley and Lettuce in frames should have their decaying leaves picked off periodically. Let a sprinkling of lime be worked amongst young plants of Cauliflower in frames to prevent their being damaged by slugs.

Digging.—As soon as the ground becomes clear of crops such as Celery, Broccolis, &c., endeavour to get it dug or trenched in readiness for the next crop. Prepare the ground at the earliest opportunity, because other and unforeseen work may afterwards claim attention. The absence of frost in the mornings has not been helpful to manure-wheeling, but by the use of a few planks the work can be carried out. Do not allow the manure to remain on the surface of the ground longer than is necessary; it is untidy, and it soon loses some of its good qualities when thus exposed to the weather.

Preparing for next season.—It is useful at this season to prepare a general plan for the cropping of the kitchen garden next year. This is a great help, especially to the inexperienced, for he is thus in a much better position to get the best results from the ground, and it will help him in his estimates for seeds, which should be ordered as soon as the gardener can estimate his requirements, or he may find that stocks of certain varieties are exhausted. It is always cheapest in the end to get the best seeds. No one can reasonably expect to grow the best crops from inferior seeds.

The Frame Ground.—The recent wet weather has hindered the work of digging, and even getting on the land, in gardens where the soil is heavy, but in such weather an opportunity occurs for putting everything in proper order in the frame ground. Manure that is ready for wheeling and carting on to the square should be protected with boards to prevent heavy rains from running through it. More often than not no manure water tank exists, and this material is lost in the drains. This should be remedied, if possible, and such liquid drainings from the manure saved for use on the crops. Litter and leaves should be placed in readiness for the making of hotbeds. Decaying vegetable matter should be turned occasionally to assist decomposition, mixing a little lime with it. Hedges round the frame yard should be examined, and any gaps made good. If no hedge at present exists, it will be advisable to plant one. Privet makes rapid growth, and affords suitable shelter from winds. It is also of neat appearance.

THE HARDY FRUIT GARDEN.

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

Training wall trees.—Defects in trained trees are easily apparent when the branches are defoliated. The shoots of horizontally-trained trees need to be nailed at regular intervals of space, which is easily accomplished on walls where the lines of bricks are visible; but if they are not a chalk line should be drawn or some other such means adopted. The branches should be trained at about 14 inches apart, which will equal three courses of bricks. Fan-trained trees I consider the most suitable for growing as large specimens. The bottom branches of these should be trained horizontally, and the next should be at a slight angle, and so on till the whole is fan shaped, with the central branch in a perfectly vertical position. These trees should now be pruned and trained as fast as opportunity permits. Any scions required for grafting in the spring should be collected, labelled, and be "heeled in" on a north border.

Planting.—All kinds of fruit-trees and bushes may still be planted in mild and dry weather. The Bullace and Damson should not be omitted, as the fruits of these are very useful, especially in a season when Plums are scarce. These trees are very hardy, and may be grown in the land skirting an orchard, or they may be given a better position, and be grown as shapely standard trees. Shepherd's Bullace (with large green fruits), Black Bullace (a very late variety) and Veitch's Bullace (a free bearer) are three of the best varieties: while among Damsons Bradley's King, Cheshire and Frogmore may be given as desirable varieties to plant.

Blackberries, etc.—These should be planted as soon as is possible, and the stakes or wires for training be had in readiness. The Logan berry is the most popular of this class of fruit. The Mahdi (Raspberry and Blackberry) is also proving a useful variety. Rubus phœnicolasius, the Wine berry, is very suitable for jam making. Rubus palmatus, the so-called Strawberry-Raspberry, is not worth growing except as a novelty. The variety Wilson Junior has long, handsome berries, and is regarded as the best of its section. Rubus leucodermis is at this season very handsome, and its flowers and fruit in July are both pretty and sweet. This species should be given a Larch pole, about 7 feet in length, for a support. These brambles are pleasing when trained over wire arches or supports.

Pruning, &c.—Continue to prune, root-prune, and train Pear, Apple, Cherry, Currant, and Gooseberry trees, and if the soil is in a very wet condition use planks for stepping upon. These remarks apply especially to bush and standard trees, this work being more easily carried out in the case of trees growing against walls. The present is a good time to prune and train Morello Cherry trees, this being a long and tedious business in cold weather. Most of the old wood should be cut away, laying in straight young shoots and keeping them rather thinly disposed. The pruning and training of this Cherry much resembles that of Peach and Nectarine trees.

Fruit Room.—Examine the fruit regularly, and remove all decaying specimens.

Orchard trees that are in a bad condition should have all the weak growths and wood cut out, more especially from the middle of the tree. Expose every branch, if possible, to the atmosphere and sunshine, remembering that one bushel of good fruit is equal in value to three or more bushels of inferior quality, whether for supplying the market or for home consumption. These trees should also be sprayed. It is surprising how many can be treated in a day or week in fine weather by earnest workers. Grass-grown orchards may be much improved by surface cultivation.

THE ORCHID HOUSES.

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

Dendrobiums.—Many of these, especially the deciduous or semi-deciduous species which finished their new growths early in the season, and were thoroughly ripened by the autumn sunshine, are now prominently showing their flower buds. Among them, may be noted D. aureum, D. nobile and its many varieties, also the garden hybrids D. Wiganianum, D. Melpomene, D. splendidissimum grandiflorum, D. rubens grandiflorum, D. Ainsworthii, D. Artemis, D. Burfordense, D. Cybele, D. Sibyl, and others. In order that an early and effective display of bloom may be made, the more forward plants may be removed from their resting quarters into a house where the atmospheric temperature at night will be about 55°, and in a few weeks, when the flower buds are nearly ready to burst open, if they are again removed to the lightest side of the East Indian house, it will assist the flowers to expand, and their colours to become clear and rich. From the present time until the flowers open, a light spraying overhead on warm, bright days, will be helpful to them. Watering must still be carried out very carefully, and only at comparatively long intervals of time, or the "breaks" that are visible at the base of the pseudo-bulbs may grow away and prevent the flower buds from coming to perfection. D. Wardianum and some of the hybrids which have been obtained through its agency, as D. Enterpe, D. Clio, D. aureo-Wardianum, D. Eurycles, D. Alcippe, D. micans, and D. Aspasia are also showing for bloom. These plants invariably produce new growth in conjunction with the flower buds, but if the plants are kept moderately dry at the root, these new breaks will remain almost dormant until the plants have finished blooming, after which time, if the plants are placed in a warm, moist atmosphere, these young growths will develop vigorously. The pretty hybrid D. Wardiano-japonicum succeeds best under comparatively cool treatment, such as is usually afforded to Masdevallias. There are some species, as D. primulinum, D. Parishii, D. tortile, D. albo-sanguineum, D. Pierardii, D. cretaceum, D. crepidatum, D. cucullatum, D. transparens, D. crystallinum, D. superbum, and its varieties Burkei, Huttoni, Dearei, and others which are still growing, should on the completion of their growth be kept on the dry side until the pseudo-bulbs show for bloom, when they should be treated as indicated for the earlier flowering varieties. The rare D. sanguinolentum thrives best if placed with the Mexican Lælias, while such species as D. glomeratum, D. subclausum, D. Jamesianum, D. infundibulum, D. Wattianum, and D. tetragonum should be kept in the coolest part of the intermediate house. Being evergreen plants, they should not be subjected to drying out, the roots requiring to be kept in a moderately moist condition at all times. These remarks apply also to such evergreen species as D. thyrsiflorum, D. densiflorum, D. Farmeri, D. suavissimum, and D. chrysotoxum, also to the nigro-hirsute section as D. Lowii, D. formosum, D. cruentum, D. draconis nebulosum, D. bellatulum, &c., but they require a few degrees more heat at all seasons. Plants of D. phalænopsis, after they have done blooming, require a long season of rest. Place them in a light and dry position in the Cattleya house, or, if more convenient, they may be suspended at that part of the warm house where the ventilators are kept more or less open at all times. Strong plants which are well rooted will require very little, if any, water, until growth recommences. The cultivator should not permit the pseudo-bulbs to shrivel to a harmful degree.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq. Clevelea, Allerton, Liverpool.

The watering of plants.—There is a right and a wrong method in applying water to plants. At this season of the year there is even greater necessity than usual for the exercising of caution now that the roots of most plants are almost inactive. Such caution is needed particularly in respect to plants that were potted late in summer and autumn, and which have not yet filled their pots with roots; also to hard-wooded plants, pot Roses, and Pelargoniums. A very erroneous method of watering plants is that of giving them a little each day, just to prevent them from becoming dry. Some plants will succeed under this kind of treatment longer than others, but they will eventually become unhealthy from the reason that the roots are never properly dry nor thoroughly wet. No plants are sooner affected by careless watering than Azaleas, and often the leaves will fall from the plants to such an extent as to leave them miserable objects to look upon. A plant should not be watered until the soil has become moderately, but not too dry, and then fill the pot from the surface of the soil to the level of the rim, thus giving enough to pass through the ball of earth and wet the whole thoroughly. The temperature of the water used should exceed that of the atmosphere of the house by 5°. A thoughtful and observant man will of necessity watch the temperatures of the water in the tanks, which varies so much during the winter months in the event of snow or hail falling. See notes in the Calendar published in the issue for October 13.

The Conservatory.—There has been plenty of material lately for keeping the conservatory gay, but Chrysanthemums are fast disappearing, and only where a good batch of late-flowering varieties has been grown will flowers be forthcoming at Christmas. Therefore, to keep the supply of flowers equal to the demand, attention must be given to the forcing of Roman Hyacinths, Lily of the Valley, Tulips, early varieties of Daffodils, Freesias, and Lachenalias; also Azalea mollis, Deutzias, Spiræas, Lilac, and Rhododendron, the variety Madame Wagner being excellent for early forcing. Lachenalias should not be subjected to very high temperatures, but may be forced gently. Deutzias will now have fully expanded their blooms, and may be subjected to the somewhat cooler atmosphere in a warm conservatory. Keep the plants moderately dry at the roots. The Poinsettias are very effective when arranged in small groups.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. SIR CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Peaches and Nectarines.—Houses containing early varieties of Peaches, such as Alexandra and Duchess of Cornwall, and Early Rivers, Cardinal, and Advance Nectarines, should by this time have been thoroughly cleansed inside and the trees made ready for forming into growth, which should be commenced towards the latter part of the present month. If any of the trees are in pots, these should be started into growth first, leaving the forcing of the permanent trees until a little later to provide a succession of fruits. Trees in pots possess this advantage: they can be moved readily, and thus their growth can be better regulated; but if no pot trees are grown, and ripe fruits are required early in May, the permanently planted trees should be started into growth slowly. Thoroughly examine the borders, and if they appear to be at all dry give them a good soaking with tepid water. The temperature to commence with should not exceed 45° at night time and 55° by day, with a rise of 5° during sun-heat. Very little fire-heat will be necessary to maintain these temperatures. Whenever the weather is favourable afford a little ventilation at the top of the house every day, and syringe the trees during the morning and the afternoon. A slight fumigation should be given once or twice before the flower buds are open, but all must be perfectly dry when this operation takes place.

Successional trees, the forcing of which is to commence on New Year's Day, should be cleaned, and receive any necessary pruning, if this has not been already performed. Trees started at this date or after the turn of the year should be afforded somewhat higher temperatures than the above, but an abundance of ventilation must be provided on all possible occasions. Houses containing later trees should be kept as cool as possible by admitting plenty of air both during the day and the night-time. Any further proposed additions or alterations to the borders should be accomplished with as little delay as is possible, and the roots must never be allowed to become dry, for this is the first cause of bud-dropping.

Vine borders.—Outside borders containing the roots of early and mid-season vines should now be covered with a thick layer of freshly-dropped leaves and long straw. This protection will prevent excessive rain and snow from penetrating the border, and will also keep the roots warmer. These borders should be examined occasionally to ascertain if rats are present, for these pests will soon attack and injure vine roots.

Nectarine Prince Arthur Crowds.—This variety is worthy of extended culture, for the fruits possess a splendid flavour, and can be had early in the season. They are of a desirable size, being pale yellow in colour, flushed with scarlet on the exposed side.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DECEMBER 8.—Dutch Gard. Soc. meet.

MONDAY, DECEMBER 10
Cent. Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, DECEMBER 11
Roy. Hort. Soc. Comms. meet.

WEDNESDAY, DECEMBER 12
Nat. Chrys. Soc. Exh. of Market Chrys. in the Foreign Flower Market, Covent Garden.

THURSDAY, DECEMBER 13—
Nat. Potato Soc. Exh. at Roy. Hort. Hall, Westminster (2 days).
Manchester and North of England Orchid Soc. meets.

SATURDAY, DECEMBER 15—German Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick=40°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, December 5* (6 P.M.): Max. 54°, Min. 42°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, December 6* (10 A.M.): Bar., 29·8°, Temp., 45°, Weather—Overcast.
PROVINCES.—*Wednesday, December 5* (6 P.M.): Max. 48°, S.W. Ireland and Cornwall, Min. 41°.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Roses, Plants, Bulbs, &c., at Stevens' Rooms, 38, King Street, Covent Garden, W.C.

TUESDAY AND WEDNESDAY—
Unreserved sale of the whole of the Nursery Stock at The Lang Nursery, Maidstone, by Protheroe & Morris, at 12.

WEDNESDAY
Bulbs, Border, &c., Plants, at 11; Roses at 1·30 and 3·30; Azaleas, Palms, Plants, Fruit Trees, &c., at 3·30, At 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY AND THURSDAY—
Unreserved two days' Sale of the whole of the Closes Hall Collection of Orchids, at Closes Hall, Gisburne, near Clitheroe, by Protheroe & Morris, at 12.30.

THURSDAY—
Special Clearance Sale of Nursery Stock at the Nurseries, Fanstead, by order of Messrs. H. Cannell & Sons, by Protheroe & Morris, at 12.

FRIDAY
Consignments of Burmese Dendrobes, Oncidium Marshallianum, Cypripedium Farrieanum, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Need for Co-operation.

When, some years ago, the adulteration of seeds had reached such proportions that honest dealers became more and more disgusted at practices which, as individuals, they were powerless to prevent, the matter was set right by the co-operation of the merchants themselves. By their joint efforts the Adulteration of Seeds Act was passed, and the straightforward vendor, who desired to conduct his business honourably, was no longer handicapped by competition with the unscrupulous adulterator. Now that the Bill for the prevention of "secret" commissions and "corrupt" practices has become an Act, it rests with the traders either to carry out the provisions of the Act, and not to offer secret discounts or commissions, or to run the risk of incurring the very heavy penalties imposed by the law. At the meeting of nurserymen held on November 20 it was agreed that the provisions of the Act should be loyally obeyed. Large and representative as the meeting was, it is certain that very many of the trade were not present, and that even now many may not be aware of the very stringent provisions of the Act. If they refer to p. 279 of our issue for October 20 they will find the terms of the Act printed in full. We must again remind some of our readers who have written to us on the subject that the Act is not specially directed against nurserymen and gardeners in particular, but applies to all trades and occupations in which secret and corrupt discounts or gifts are, or have been, offered or accepted. The words "secret" and "corrupt" have no terrors for the honest, straightforward man who supplies goods of adequate quality at reasonable prices. The unscrupulous man, who is reputed to have ordered more goods than were required in the hope of getting a larger discount will live in apprehension, and the merchants who offer it will assuredly suffer in reputation and public esteem even if they manage to escape the full penalties of the law. It rests, then, with the merchants to co-operate in carrying out the law, it devolves upon the agent and the purchaser to do nothing which can be deemed either secret or corrupt. The provisions of the Act are aimed, not at individuals, but at a system which has been abundantly proved to be fraught with evil consequences.

The London Chamber of Commerce which was incorporated for the purpose of guarding the commerce of the principal city of the world, recognised that in many cases fair trading was being fettered by corrupt considerations, and promoted the Prevention of Corruption Act which, largely owing to the protracted efforts of Sir Edward Fry, the late Lord Russell of Killowen, Lord Alverstone, Lord Halsbury, and others, has duly become law. The Secret Commissions and Bribery Prevention League (58, Coleman Street) has been formed with the support of the leading members of the Secret Commissions Committee of the London Chamber of Commerce for the purpose of taking active measures for the enforcement of the Act. With this object in view the League will take every legitimate means in its power to combat the evil of secret commissions and bribery.

If co-operation on the part of the dealers is necessary it is no less so on the part of the gardeners. There are many gardeners who accept the position and receive the wages of a garden-labourer. The British Gardeners' Association is founded with the object of remedying this state of things, by offering some guarantee to the employer that the man he employs is really, and not merely nominally, a gardener, and by urging the necessity of paying the duly trained gardener at a rate commensurate with his abilities and the responsibilities incident to his position. In too many cases the gardener receives a lower salary than is accorded to other servants in the same establishment, whose attainments and responsibilities are much less. Gardeners are of necessity so isolated that, individually, they can do little, but by legitimate co-operation they can, while scrupulously respecting their employers' interests, improve their own position and do away with the unwholesome competition with untrained and incompetent men.

Roses.

The National Rose Society has issued a new "official" catalogue of Roses, which we heartily commend to all Rose lovers—that is to say, to everybody. It is distributed among the members of the Society, but outsiders can procure a copy for half-a-crown through the mediation of one of the elect. In its compilation the requirements of the ordinary Rose-grower are fully catered for, whilst the interests of the "exhibitor" are not overlooked. First of all we have a descriptive catalogue, arranged alphabetically, and with brief indications of the particular purpose for which each variety is best suited. Then we have a list of Roses arranged according to the classes to which they belong—H.P., T., H.T., &c. This is followed by selections for general cultivation, for bedding, for standards, for walls, for pillars, for pergolas, for covering banks, for edging, for pot culture, for towns, for exhibitions, &c. The most fragrant Roses, as here enumerated, are Alfred Colomb, Camille Bernardin, Cherry Ripe, Common Provence, Dr. Andry, Dupuy Jamain, Exposition de Brie, General Jacqueminot, Heinrich Schultheis, La France, Mdme. Isaac Pereire, Maiden's Blush, Marie Baumann, Mrs. John Laing, Paul Jamain, Rosa Mundi, Senateur Vaisse, and Ulrich Brunner.

The whole list is so instructive that it will prove valuable to amateurs. There are many, perhaps the great majority, who only care for a Rose for its beauty and fragrance, but there are some few who would like to know a little more about their favourites. What constitutes a noisette? What is the difference between a T. and an H.T.? and so forth. They would like also to know why one Rose is globular, another conoid; why one Rose is quartered like the Souvenir de la Malmaison; why one has a tangled mass of petals in the centre like Gloire de Dijon, whilst another, like A. K. Williams, is symmetrical and regular in the disposition of its petals; why some petals recurve and others remain flat, or nearly so, and so forth.

A little information on such points as these would not detract from the pleasure of looking at a Rose, whilst to many they would be a source of additional interest.

To those who have followed the progressive development of a Rose from the time it is no bigger than a pin's head, till it arrives at the full size, these details are, of course, more or less familiar. The great body of rosarians have neither leisure nor opportunity to make recondite researches of this kind, but they could, and many would, appreciate a statement of the general results at which the morphologists have arrived, and which could be readily explained by means of diagrams. By their aid the "reason why" of the varied Rose forms could be set forth without entailing too much uninteresting toil on the Rose lover. We are rather apprehensive as to the reception these suggestions may meet with at the hands of rosarians, but as no one is obliged to adopt them we may hope for a charitable appreciation of our motives.

OUR SUPPLEMENTARY ILLUSTRATION to the present issue depicts four of the newest varieties of winter-flowering Carnations, all of which were present at the exhibition of these flowers in the Royal Botanical Gardens on Tuesday last, a detailed report of which appears on another page. Tree Carnations have flowered in this country in winter for many years past, and Mrs. Leopold de Rothschild, Winter Cheer, and Uriah Pike are some of the older varieties that gained considerable popularity. Since the introduction from America of varieties having large, brightly-coloured flowers, which are produced on stalks sufficiently strong to hold them perfectly erect, the winter-flowering section has become more and more appreciated, and their cultivation is extending widely. We have information of several instances where special houses for tree Carnations have been recently erected in gardens which had not suitable structures for them. New varieties are being raised in great numbers in America, and latterly also in England, and in consequence many of the varieties are only distinct from each other in minor characteristics. The Winter Flowering Carnation Society will soon, we think, have reason to keep a list of "too-much-alike" varieties, and in the meantime raisers should be urged to endeavour to secure definite variations in form and colour. They hardly need to be reminded that a yellow variety is much coveted. The novelties included in the supplementary illustration are White Perfection and Mrs. Robert Norman (white), and Robert Craig and St. Louis, both of which are shades of red. The greater degree of fringing may be seen in the petals of the varieties Robert Craig and White Perfection. Robert Craig, White Perfection, and St. Louis have all received the R.H.S. Award of Merit.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.—The sixteenth annual dinner is announced to take place on Tuesday, December 11, at the Holborn Restaurant, when Mr. T. W. SAUNDERS, the President, will preside.

NATIONAL POTATO SOCIETY'S SHOW. We are informed that entries have been received from various parts of the kingdom for the above show, which will be held in the Horticultural Hall, Westminster, on December 13-14. A Potato cooking competition for ladies will be held each day of the show. The non-competitive section will include some of the crop of Solanum Commersoni (swamp Potatos) which Mrs. HANCOCK has successfully cultivated at Horeham Road, Sussex. A satisfactory crop has recently been lifted, quite untouched by frost or disease, although the ordinary tubers in an adjoining plot were seriously affected. The usual conference will take place at 3 p.m. on the first day, when Mr. H. HENSHAW, of the Cambridge University Farm, Impington, will read a paper on "Facts about change of seed." Mr. GEORGE GORDON, V.M.H., will preside. In the evening the members' dinner will be held at the Hotel Windsor, Victoria Street, to be followed by the annual meeting.

DAHLIA SOCIETY IN THE UNITED STATES.—Not until this year has there existed a Dahlia society in the States, but one has recently been established, which is known as the New England Dahlia Society, consisting at present of 100 members. Mr. H. F. BURT, of Taunton, Mass., is president, a man who devotes almost all his time to Dahlias, and Mr. MAURICE FULD, of the firm of Messrs. W. W. RAWSON & Co., of Boston, is Secretary.

"MARKET" CHRYSANTHEMUMS.—The special exhibition of Chrysanthemums, as grown for market, will be held on Wednesday next, December 12, in the Foreign Flower Market, Covent Garden. Particulars may be obtained from the secretary to the National Chrysanthemum Society.

THE LABORATORY AT WISLEY.—We desire to call special attention to an advertisement from the R.H.S. inviting candidates to apply for the post of Director of the Experiment Station. The director will not only have to devise experiments and undertake research, but will also be expected to instruct the students in the elementary sciences affecting the practice of horticulture. The position is one of such importance that we trust a thoroughly competent man, gifted with insight and initiative, will be selected. The success or failure of the scheme depends essentially upon the man selected and the support afforded him by a sympathetic council. From some points of view this is the most important step ever taken by the society and the results will be anxiously watched.

MR. MITTEN'S MOSSES.—We are sorry to hear that the very rich collection of Mosses made by Mr. MITTEN has been allowed to leave the country and has become the property of the American Government.

M. BUYSMANN, of Middelburg, Holland, is about to settle in the interior of the Eastern part of Java, where he will grow not only tropical plants but also such temperate plants as will grow in that climate at an altitude of 1,200 metres. This portion of the island has, up to the present, not been much explored, so that, no doubt, many interesting plants may be expected from that district. M. BUYSMANN will settle in Java in the course of next spring, and will be glad to communicate with any horticultural firm or botanist desirous of receiving plants or seeds from that island.

INTERNATIONAL CONFERENCE ON PLANT HARDINESS AND ACCLIMATISATION.—The responses to the preliminary letter of inquiry issued in the early part of this year have proved so encouraging that the council of the Horticultural Society of New York, at a recent meeting, decided to proceed with the project, and is arranging to hold the conference in New York City about the end of September, 1907. From all parts of the United States, from several European countries, and from South America and Canada, as well as the West Indian Islands, active interest has been expressed, and, at this early date, a number of papers and contributions have been promised. The conference has the endorsement of the United States Department of Agriculture, and the majority of the directors and horticulturists of the State experiment stations have signified their intention of contributing information or sending delegates. The great importance of the subjects to be discussed in their relationship to practical horticulture, fruit-growing and the nursery trade is evident to every one. A special committee of the society in charge of the arrangements for the conference was appointed as follows:—JAMES WOOD, N. L. BRITTON, P. O'MARA, H. A. SIEBRECHT and LEONARD BARRON. Communications from those interested should be addressed to the office of the Society, Room 60, Bryant Building, 55, Liberty Street, N.Y. City.
L. Barron, Secretary

THE SMITHFIELD CLUB SHOW.—We are reminded that the Fat Cattle Show will be held in the Royal Agricultural Hall, Islington, on December 10, 11, 12, 13, and 14. The Board of Agriculture informs us that Lord CARRINGTON will be "at home" to farmers at the offices of the Board of Agriculture, 4, Whitehall Place, S.W., on Tuesday, December 11, and Friday December 14, from 12 o'clock to 2 p.m., and from 3 p.m. to 4 p.m. Lord CARRINGTON will visit the Show of the Smithfield Club on Monday, December 10, and he has accepted an invitation to be present at the Annual Dinner of the Farmers' Club and the Central Chamber of Agriculture on December 11.

BURBANK AND HIS WORK.—Professor KELLOGG, as quoted in the *Florist's Exchange*, gives his impressions in the following summary:—"Let us, in a paragraph, simply sum up the essential things in the scientific aspects of BURBANK'S work. No new revelations to science of an overturning character; but the revelation of the possibilities of accomplishment, based on general principles already known, by an unusual man. No new laws of evolution, but new facts, new data, new canons for special cases. No new principle or process to substitute for selection, but a new proof of the possibilities of the effectiveness of the old principle. No new categories of variations, but an illuminating demonstration of the possibilities of stimulating variability and of the reality of this general variability as the fundamental and transforming factor. No new evidence either to help the Darwinian factors to their death-bed or to strengthen their lease on life; for the 'man' factor in all the selecting phenomena in BURBANK'S gardens excludes all 'natural' factors. Finally, in any summation of the scientific aspects of BURBANK'S work must be mentioned the hosts of immensely valuable data regarding the inheritance of characteristics, the influence of 'epigenetic' factors in development, the possibilities of plant-variability, and what not else important to evolution students, mostly going unrecorded, except as they are added in mass to the already too heavy burden carried by the master of the laboratory, and as they are summed up in those actual results which the world gratefully knows as BURBANK'S 'new creations.'"

WILD FLOWERS AT HOME.—Messrs. GOWANS & GRAY, 35, Leicester Square, W.C., are issuing a set of pretty little nature-books. Of these we note *Wild Flowers at Home*, first and second series, illustrated from photographs by Mr. CAMERON TODD; *Toadstools at Home*, illustrated by Mr. SOMERVILLE HASTINGS; and *Our Trees and How to Know Them*, with photographs by Mr. CHARLES KIRK. Any effort that helps in diffusing a knowledge of the beauties of British country-life should be encouraged, and as each of these little volumes contains 60 pictures and some explanatory notes they should do good work. We are glad to find scientific names quoted, as well as popular and fancy names, and the only thing to be regretted is the unavoidably small size of the photographs. Also, it would have been convenient to have mentioned how much the plants shown are reduced in size in reproduction. There is an attempt to do this in *Toadstools at Home*, the best of the series, but here the sign of multiplication is used instead of that of reduction.

THE BRUSSELS COURT OF APPEAL. It will be remembered that one of our Orchid cultivators purchased, for the sum of 30,000 francs (£1,200), five varieties of Orchids on the strength of some coloured illustrations published by the vendor. When the plants produced their flowers it was found that they were not equal to the representations. The purchaser therefore took steps to have the sale cancelled. As the vendor objected, the case was submitted to the Tribunal of Commerce, who, after hearing the evidence, appointed certain well-known experts, all Belgians, to assist them, and in the result the case was decided in favour of the purchaser. The decision was appealed against, and as we now learn from the short report of the case in the *Revue de l'Horticulture Belge*, the Court of Appeal repudiated the idea of any substitution having taken place and stated that the plants in question are the same as those sold to the purchaser, and that as they do not correspond with the representation made by the seller the sale is annulled. It results that the original purchase money, with interest and expenses, is to be paid back to the purchaser, in addition to the sum of 5,000 francs damages. The law costs to be paid to the purchaser amount, says the *Revue*, to 8,000 francs (£320).

THE ART OF THE FLORIST.—At an exhibition of floral decorations held recently at Brussels and reported in the *Tribune Horticole* for November 3, M. MAUMENÉ, of Paris, availed himself of the opportunity of speaking on some of the principles of floral decoration, &c. He took for his text the baskets, bouquets, and table decorations as exhibited, explaining the principles which govern the florist's art. These principles are not numerous, but comprise good taste in the choice of colours, observation of the natural mode of growth, a little economy, and a good deal of fashion. To have beautiful bouquets it is necessary to choose vases appropriate in shape to the flowers that they are to contain: short and wide vases for Chrysanthemums and long slender vases for Roses and Orchids. Highly ornamented vases are unsuitable and they are best when subdued in colouring. In narrow vases the height of the bouquet should be about 2 to 3 times greater than that of the vase. The flowers must not be crowded, as it is not desirable that bouquets should have too regular outlines. The flowers should, on the contrary, be isolated and suggest their appearance when growing on the plant. Flowers are now not "mounted," the wire used simply serves to support the stem which can thus be thrust into the damp moss in the vase; the bouquets thus keep much longer. When only short-stemmed flowers are obtainable, as is the case with many spring-flowers, very pretty arrangements can be made by sticking them into bamboo stems put together like the branches of a tree. It is thought undesirable nowadays, especially for the decoration in glass vases, to employ bouquets of flowers which fade quickly, hence the flowers are placed in little tubes immersed in zinc pans full of water concealed by greenery. M. MAUMENÉ mentioned the excellent effect of mixing autumn leaves with Chrysanthemums. He insisted on the necessity for contrast in colouring, mauve and yellow, of which there were many examples, giving a good colour, harmony. Green is a neutral colour for florists, and that is why pink Carnations contrast so well with foliage. The use of ribbon in bouquets is rather out of favour; it has been much criticised because ribbons brighter than the flowers were employed. Baskets were much less numerous than bouquets at the exhibition. The lecturer showed a basket of foliage plants where Dracænas struck a prominent note of red. Cut flowers were inserted in the mould and when these faded and were removed there still remained some beautiful plants for room decoration. Table decorations received much attention from M. MAUMENÉ. These should be elegant, light, and interspersed with pendent clusters of flowers, enabling the guests to see across the table easily. Light foliage, such as that of Asparagus, is much used. Those flowers should be chosen which look well under artificial light: Cattleya, pink Carnations, and Parma Violets fulfil these requirements; ordinary Violets on the contrary seem darker in a lighted room. A somewhat novel plan has been adopted for dinners at separate tables, each table being decorated with different flowers, such as Carnations, Roses, Lilies of the Valley, Mimosa (Acacia), Parma Violets, Cattleyas, &c., buttonholes and bouquets of the same flowers being distributed to the guests, who thus easily find by this indication the particular tables reserved for them.

THE SAN JOSE SCALE. The *National Nurseryman*, of Rochester, N.Y., gives details of the success which has been obtained in combating this pest. One gallon of "Scalecide" was mixed with 12½ gallons of water, and with this the trees (pears) encrusted with scale were thoroughly sprayed in October and twice subsequently. The lime-sulphur wash was also used (Professor SLINGERLAND). The results were so successful that an offer of a dollar for every *living* scale has been offered, but no one has as yet claimed the reward.

THE ETHERISATION OF LILACS.—In Dresden, according to an article in Möller's *Deutsche Gärtner Zeitung*, several firms working in association with the Research Station have obtained excellent results with etherisation, and now employ the process regularly. It is sufficient to avert any chance of failure if the directions given by Prof. Johannsen in the first edition of his book are carried out fully. A second edition, which appeared this year, is considerably enlarged, and contains everything that has been published concerning etherisation, besides remarks on the remarkable appearances which the plants present on the completion of the process. The larger cultivators at Dresden, finding that the sort of etherising chamber recommended by Johannsen was too small for their purpose, cultivate dwarf Lilac plants, and knowing the property of ether vapour to sink to the bottom, make the chambers much broader than high, and fill them with tiers of plants laid on their sides. Etherisation may be carried out in a frame placed in a glasshouse, and although much of the ether escapes into the house when the frame is cleared of the plants, no harm results to the inmates of the house, but, as Johannsen states, the dilute mixture of air and ether may excite growth in them. The frame or chamber must be hermetically closed, and it should be opened for an hour or longer time after using it before any person ventures therein. According to observation, etherised Lilac bushes do not need to be placed in a warm house directly they are removed from the chamber, under the belief that the narcotic effects of the drug will evaporate. The effects, in the autumn months more especially, do not go off, so that the growers in Dresden, Hamburg, Kiel, or anywhere else, may safely send etherised Lilacs, &c., to their customers long distances, ready for forcing, a circumstance which has lengthened the Lilac season to an extraordinary extent. It may be said, according to Prof. Johannsen's statements in his book, that any gardener can have flowering Lilac from the end of the month of November, if he carries out the instructions given and possesses a sufficient acquaintance with varieties, some forcing readily in the autumn, and others very slowly, or not at all.

PUNCH'S ALMANACK.—The approach of a new year has been marked by the appearance of *Punch's Almanack* for more seasons than we care to count. The present issue is full, as usual, of amusing skits, written and drawn by well-known humorists. The actual almanack is a double-page supplement illustrating "All the Year Round in Fairy Land," and it is a seasonable pastime to trace many childish friends in the dainty landscape in which Mr. ARTHUR ROGHAM has arranged them. In fact in every detail our old friend is more than up to his usual standard of excellence.

LA REVUE DE L'HORTICULTURE BELGE. This periodical was established more than thirty years ago with the object of giving publicity to new plants, of bringing to remembrance old favorites, of recording progress in horticulture and botany, to serve as a guide to amateurs, and as a medium for the use of nurserymen. It was founded by a group of ardent horticulturists, headed by Count de KERCHOVE, EDWARD PYNAERT, and other friends whose memory will always be held in deep reverence and gratitude by those who had the privilege of their acquaintance. F. BURVENICH, the last survivor, is happily still amongst us. It would not be easy to exaggerate the services the men we have mentioned rendered to horticulture in general, and to that of Belgium in particular. The *Revue* is only one of their good works. It has faithfully adhered to its programme, and is now about to extend its usefulness by appearing twice in the month instead of once only. The number of illustrations will be increased, but the rate of subscription will remain unchanged. *Floreat!*

SUTTON'S RECREATION CLUB.—The employees of Messrs. SUTTON & SONS, Reading, who recently amalgamated their various sections of sports under the above title, assembled on Friday, November 23, on the occasion of the first annual supper in connection with the club. Mr. LEONARD SUTTON presided over a company of more than 200 of the members.

THE NEXT GREAT QUINQUENNIAL, 1908.—The committee is already hard at work drawing up the schedule and making other preparations for this great undertaking. Truly we may say, recalling the late President, *Uno avulso non deficit alter*. A similar remark applies to EDWARD PYNAERT, who is succeeded by his son, as well as to others of the committee.

OLD-FASHIONED FLOWERS.—By MAURICE MAETERLINCK. (London: GEORGE ALLEN.) This book has no preface to explain the writer's intention, and we are only told that it was composed by Mr. MAETERLINCK, translated by A. TEIXEIRA DE MATTOS, and illustrated by G. S. ELGOOD. Consulting the pages, we find for once neither gardening instructions nor a jumbled description of plants, persons and opinions. It is a book in praise of old-fashioned flowers, not necessarily those that have been longest known and grown, but such as we and our immediate ancestors have raised and loved. While sharing the admiration expressed, we need not feel obliged to sympathise with the writer's style of writing, nor with all his opinions. He is welcome to dislike scientific names, and to be inconsistent even in this where he mis-spells some names, and uses others even longer than those to which he objects. As to the language, an extract from the book will enable our readers to judge of it for themselves. Speaking of "News of the spring," he says: "The Peach trees are now no more than a rosy miracle, like the softness of a child's skin turned into azure vapour by the breath of dawn. The Pear and Plum and Apple and Almond trees make dazzling efforts in drunken rivalry, and the pale Hazel trees, like Venetian chandeliers resplendent with a cascade of gems, stand here and there to light the feast." There are some hundred pages of this sort of writing. The coloured pictures are truthful yet bright, and therefore pretty and pleasing; and the whole book is attractive, in spite of florid rhetoric displayed in it.

BLACKIE'S NATURE-KNOWLEDGE DIARY.—This is a memorandum-book ruled into columns wherein notes are intended to be made upon the weather and such natural objects as birds, insects, trees, wild flowers, &c., as children meet with in their daily life. Mr. W. P. WESTELL prefaces the book with some notes on nature study in which he shows how the diary should be used, and how facts observed should be entered in it in the spaces prepared for such notes. To encourage school children, Messrs. BLACKIE & SON (Dublin, London and Bombay) offer to present six books yearly for the six best kept Nature-Knowledge Diaries. To use these books properly will necessitate neatness, as well as calling out powers of observation which it is highly desirable should be cultivated.

DRESDEN INTERNATIONAL HORTICULTURAL EXHIBITION, MAY, 1907.—We have received copies of the schedule of this important exhibition. Applications should be made to the secretary of the exhibition, Neumart 10, Dresden.

BUDDING LIFE. This is a "book of drawings" by JESSIE M. KING, published by GOWANS & GRAY, of London and Glasgow. It consists of less than a score of outline illustrations on note-paper size. The execution is very Japanese in character. The drawings are natural, elegant, and faithful as far as they go, but with not sufficient detail to be useful to botanists or gardeners.

SEED LIST.—The list of seeds of herbaceous plants and of trees and shrubs available for exchange at the Royal Gardens, Kew, has been issued. It must be borne in mind that the seeds mentioned are only exchanged with botanic gardens and regular correspondents and not with the general public.

EPSOM SALTS FOR AZALEAS. It is generally admitted that lime is detrimental to the growth of Rhododendrons and allied plants. In the *Garden Magazine* (New York), Mr. HOGENSON says that the evil effects of lime in the soil may be counteracted by the addition of sulphate of magnesia (Epsom Salts). For pot plants one quarter of an ounce of magnesia sulphate was mixed with 5 pounds of soil, or at the rate of a little over 3 tons per acre. The photographs of Rhododendrons and Azaleas grown in lime-soil with and without the addition of the magnesia, bear out Mr HOGENSON's statement.

A BOOK OF ENGLISH GARDENS. Written by M. R. GLOAG, illustrated by KATHARINE MONTAGU WYATT, and published by METHUEN & Co., 36, Essex Street, W.C. We have in this book chatty accounts of some of the famous old gardens of England. The introductory chapter is a discourse upon gardens in general and a brief chronological account ranging from the Garden of Eden (of course) to our own times. We find here all the time-honoured allusions to the hanging gardens of Babylon, to Pope's Grotto, and to equally familiar eccentricities of intermediate date. The succeeding pages of the book deal with gardens still left to us, showing the work of our forefathers and the fashions of past times. The estates described are Abbotsbury, Albury, Ampthill Park, Ashridge, Beckett, Brownsea Island, Ham House, Hatfield, Holland House, Hutton John, Knole, Sutton Place, and Wrest Park. The chief attractions of these to the makers of the book appear to be their antiquity, and the general sense of repose and pleasure that they afford the visitor. Of horticulture we find but little, and of botany nothing at all. Perhaps it was difficult to separate these gardens and their associations from the history of the houses to which they are attached. In every case we read a good deal about the families owning the estates described, even when their affairs have nothing to do with the gardens. The illustrations deserve notice, as they give a pleasing, though often an inadequate, idea of certain specially beautiful nooks and corners. They are brightly coloured and appropriate to the style of the book. Every reader interested in the "Stately Homes of England" will enjoy turning over these pages and find many stray pieces of information worth remembering, while to the many persons connected with the various estates the letterpress and pictures will of course be of equal importance.

BRITISH ALPINE PLANTS.—To those who want to know something more about "Alpines" than that they are beautiful and attractive, we commend a paper on the distribution of Alpine plants in Britain, read before the Southport Society of Natural Science by Mr. W. H. STANSFIELD. In simple but most interesting manner Mr STANSFIELD traces the origin, ancestry and migrations of our mountain plants. J. J. RILEY, *Guardian* Office, Lord Street, Southport, is the printer.

"HELIANTI."—Under this name M. R. DE NOTER calls attention to the well-known Helianthus decapetalus. According to M. DE NOTER it produces tubers in great abundance, so great that we hesitate to cite the figures he gives. The tubers can be used as food like those of its congener, the so-called Jerusalem Artichoke, but specially for the extraction of starch and the production of alcohol. The stems can be utilised for forage and the fibre for paper-pulp. The culture is simple and the profit large. At any rate, M. DE NOTER'S assertions may be easily tested.

BOTANIC GARDENS, SAHARANPUR.—Mr. H. M. LEAKE, F.L.S., Economic Botanist to the United Provinces, who has had charge of these gardens for the past two years, has been transferred to the Agricultural College at Cawnpore, and is succeeded by Mr. A. C. HARTLESS, lately Chief of the Governmental Gardens in the Bombay Presidency. The latter is succeeded in Bombay by Mr. I. LITTLE, from the Royal Botanic Garden, Calcutta.

GARDEN-MAKING. Mr. JOSEPH CHEAL has published a small pamphlet on this subject, wherein he lays down the general principles of garden-making, dealing with the choice of site, the approaches, the formation of lawns and plantations, the treatment of water, the designing of gardens in various styles, the formation of wild gardens, woodlands, Rose-gardens, and other accessories. The pamphlet is copiously illustrated, and the comments sensible and to the point. We suggest that a rustic timber bridge is not the most appropriate, though it is doubtless the most common, means of crossing a rocky defile, where the stratification of the rocks, natural or artificial, is very apparent.

JOINT RAILWAY AND PARLIAMENTARY COMMITTEE. We are informed that at a meeting of the Joint Railway and Parliamentary Committee held on the 28th ult., Mr MONTAGU (President) and Mr. W. CHEETHAM reported that they had met several members of the House of Commons at Westminster to discuss railway rates, &c., and had been given a favourable and encouraging reception from members representing all political parties. One of them reminded the committee of a hint given by the President of the Board of Trade, that a discussion was likely to shortly take place in the House on owner's risk and kindred questions, and he suggested that the committee should use all possible means to raise such a discussion, as it would bring the matter prominently before the Government, and would also tend to facilitate matters when the Bill which the committee now have in hand was brought up in the House.

"AMATEUR GARDENING."—Our contemporary *Amateur Gardening* issues an attractive Christmas number, with a coloured and gay cover illustrating the Time of Roses. There are many other pictures reproduced from photographs, and therefore truthful as well as pleasing. The letterpress is, of course, not to be overlooked, and in addition to light and seasonable reading there will be found here the usual practical and helpful information.

WHAT IS DONE IN EDINBURGH. We are so accustomed to read of the magnitude and superiority of everything American, that we feel as if a load were removed from us when reading President DUCKHAM's address to the Chrysanthemum Society of America as reported in the *American Florist*. "I had great pleasure in attending the Edinburgh (Scotland) show, 1905, and I must confess I was completely overwhelmed by it, both by the magnificent blooms shown and the attendance. There were over 70,000 paid admissions in three days. Think of that and be humble! Nay, think of that, and lay plans day and night to rouse our people to a similar interest! What could we accomplish if we had a constituency like that?" The old country it seems is not quite played out yet!

DOGS ACT, 1906. "Section two of the Act which comes into operation on January 1st, 1907, empowers the Board to make Orders under the Diseases of Animals Acts for the following purposes:—*(a)* for prescribing and regulating the wearing by dogs, while in a highway or in a place of public resort, of a collar with a name and address of the owner inscribed on the collar or on a plate or badge attached thereto; *(b)* with a view to the prevention of worrying of cattle, for preventing dogs or any class of dogs from straying during all or any of the hours between sunset and sunrise; and *(c)* for authorising a Local Authority to make Regulations for either of these purposes. The Orders and Regulations will take effect under the Diseases of Animals Act, 1894, and the Orders may provide that any dog in respect of which an offence is being committed against the Orders may be seized and treated as a stray dog." If some Act could be enforced requiring the owners of a dog or dogs that disturb their neighbours' peace of mind, especially at night, to wear a collar issued by the police, no doubt the nuisance which residents in the suburbs now suffer would be materially abated.

Publications Received. *Agricultural Bulletin of the Straits and Federated Malay States* (July), Edited by H. N. Ridley and J. B. Carruthers. Contents, Tapioca as a Catch-crop, by Mr. W. Dunman; Rim Rubber Company, Ficus elastica, &c. *Reports on the Botanic Station, St. Vincent* (1905-1906). Mr. Sands, Agricultural Superintendent, reports continued success and extension of the Cotton industry, and good work was done in the Gardens and other departments. California Agricultural Experiment Station. *Mosquito Control*, by H. J. Quayle. A campaign against mosquitos was begun in May 1904. It was found that there were four especially troublesome species around Berkeley, and experts indentified these and traced their life histories. The chief measures undertaken for the control of the pests were the filling in of some waters and the oiling of others. The success so far achieved in this important work should encourage further efforts in this direction.

CHRYSANTHEMUM NOTES.

AMERICAN CHRYSANTHEMUMS.

It is not many years ago since we used to receive from American growers like Spaulding, Nathan Smith, Hill, Waterer, Craig, and others an annual consignment of novelties. On going my rounds this season here and there, I have been reminded of the days when American Chrysanth mums were a factor to be reckoned with, for a change variety in some group or other has aroused many memories. They are still a few, but they are rarely to be met with in the big stands of the leading prize winners at our great shows. Harry Wonder and J. H. Runciman are to be seen in several of the parks. They remind us of the large collection of seedlings raised by Pitcher and Manda, which ultimately passed into the hands of Mr. H. J. Jones. Louis Boehmer is still grown in the parks. This was the second hairy variety introduced, the original one, Mrs. Alpheus Hardy, having so far as my experience goes, completely disappeared. Simplicity (a white Japanese), Esau (a pale pink, hairy), and Col. W. B. Smith (a bronze-yellow Japanese) are all in the collections in the London parks. Ivy Anemones we still have with us. Judge Benedict and Delaware. Several fine blooms of Good Gracious, one of the most distinct varieties there ever was, have been recorded. G. W. Childs (a vivid crimson) I have seen only at Finsbury Park. In France, as here, not many American varieties remain. Julian Hillpert is largely grown for the market, and was one of the Pitcher and Manda seedlings. W. H. Lincoln is occasionally met with; also Wm. Tricker, the Egyptian, Modestum, Col. Appleton, and Mrs. H. Robinson. It is only natural to suppose that every raiser has his day. Salter's seedlings are gone, Delaux's are scarcely known, and so we may expect even the best varieties of the most modern raisers will in their turn give place to others as time rolls on. "Sic transit gloria mundi." *C. Harman Payne.*

YELLOW CHRYSANTHEMUMS.

I do not remember a season to have gone by in the past when so many grand examples of yellow Chrysanthemums have been met with. F. S. Vallis, in my opinion, heads the list, for it has been seen in magnificent form: the finest blooms ever shown anywhere must have been those staged by a new amateur, Monsieur Dubuisson-Joubert, at the Paris Show. He had staged in a vase seven of this variety that measured about 18 inches across from tip to tip. Lieut.-Colonel Ducrocquet is another grand yellow that has been seen in fine style. Mrs. F. W. Vallis, Mrs. W. Knox, Buttercup, Alger-

non Davis, Mrs. R. Hooper Pearson, Merstham Yellow, Sensation, Bessie Godfrey, Le Peyron, Leigh Park Rival, Souvenir de Bailleul, Ministre Morgeot, Ami Nonin, Le Bouvier, Mme. G. Rivol, Calvat's Sun, Emblème Poitevine, Naples, Roi d'Italie, and several others in various shades have all been seen in first-class form. *C. H. P.*

MARKET CHRYSANTHEMUMS

SOME of the finest Chrysanthemums seen in Covent Garden Market are those sent by Mr. Joseph Tulley, Rose Nursery, Enfield Highway. I recently visited this nursery, and the plants seen in the houses impressed me as being quite of the best. Some 18 span-roofed houses are now accommodating some 38,000 Chrysanthemums in pots. Two houses were filled with the variety William Holmes, which, at the time of my visit (November 14), was at its best condition. Dazzler, the bright scarlet crimson variety, had been partially harvested, but there still remained a rich cutting. The bulk of the plants were carrying from 10 to 12 blooms each. The variety Mdlle. Louise Charvet was excellent, the crop being the most promising one I have ever seen both for size of bloom and for colour. Of the variety Mdlle. Th. Panckoucke the flowers were developing too early in the best buds. A house contained the pink variety A. J. Balfour, but none had been cut. Tuxedo is of splendid colour, and suitable for florists' sprays. Eynsford White is still one of the best varieties for decorative purposes. Putney George, although raised many years ago, is still one of the best market kinds, and sells freely in the market. Klondyke, Mabel Butler (the dark Tuxedo), Early Yellow, Mytchett Beauty, and Nagoya were all noticed. One house containing the variety Cullingfordii, the plants being grown under cold treatment in pots, was alone worth journeying to see. The house was filled with 2,000 plants, the flowers being of the deepest colour I ever saw in this variety. Every house was well arranged, the taller plants being in the centre and the dwarfer ones at the side. The nursery is well equipped and up-to-date in every respect. *Stephen Castle.*

CASSIA REMIGERA.

FOR the opportunity of illustrating this rare species, fig. 150, we are indebted to Mr. Millard, Malabar Hill, Bombay, who sends the following interesting note with the photograph —"I send you by this mail a photograph of Cassia remigera in flower in my garden. In Hooker's *Flora of British India*, the flowers are described as unknown: but, of course, that was written many years ago. The tree, which is now about 20 feet high, was sent to me seven years ago by a friend in Rangoon, where it seems to be fairly common. It is the most beautiful Cassia I have seen—even superior to C. marginata and C. grandis. The branches are clothed with the light pink blossoms, each about ¾ to 1 inch in diameter, with prominent yellow stamens. The tree remains in flower for a period of nearly two months. It reminds one somewhat of a Cherry tree in England

FIG. 150.—CASSIA REMIGERA IN A BOMBAY GARDEN, FLOWERS PINK.

LAW NOTES.

SECRET DISCOUNTS.

IT does not appear to be generally known that, apart from the damage to commercial reputation or the risk of blackmail run by those who commit a criminal offence under the "Prevention of Corruption Act," there is a serious financial liability incurred by those who give "secret" discounts to buyers or other agents. In the present article it is not proposed, however, to deal with this aspect of the matter.

Dealing with the question of criminal liability, one must, at the present moment, necessarily rely to some extent upon the wording of the Act itself, coupled with the possible bearing on the point of reported decisions of the Civil Courts under circumstances more or less similar.

The provisions of the Act (see p. 279) have already appeared in these columns, and need not be again set out here, but readers will recollect that for the purposes of the Act, the expression "consideration" includes valuable consideration of *any* kind, while an "agent" includes any person employed by or acting for another. It will also be remembered that the maximum penalty on conviction is, if the case is dealt with at the Assizes, imprisonment, with or without hard labour, for a term not exceeding two years, or a fine not exceeding £500, or both fine and imprisonment. A magistrate has, however, power to deal with the matter in a Court of summary jurisdiction, but in this case the penalties which he may impose are not to exceed four months' imprisonment, with or without hard labour, or a fine not exceeding £50, or a combination of both fine and imprisonment. On conviction by a magistrate, the prisoner has a right of appeal to Quarter Sessions; also it is important to bear in mind that (presumably as some precaution against the obvious possibility of frivolous prosecutions) there is a provision in the Act to the effect that a prosecution under this Act shall not be instituted without the consent of the Attorney-General or Solicitor-General.

This Act not only makes it a criminal offence to give, or agree to give, any payment of the kind now under consideration, but it renders equally liable any person who accepts, or agrees to accept, or even attempts to obtain any such payment. Therefore, although it may be difficult to get at foreign nurserymen carrying on business abroad (their agents in England presumably being careful to know nothing of the matter) yet apparently the gardener who received in England, or even asked for, any such payment would none the less find himself liable to fine and imprisonment.

It has been suggested that the Act would not touch a trader who gives to a buyer or other agent a secret discount or commission after the transaction is completed, but note that the Act specifically includes the words "*having done* or foreborne to do." It has also been suggested that a nurseryman only makes a customer's gardener a small present to induce the latter to give every care and attention to the seeds or plants supplied while they are in course of cultivation, but this argument invites the obvious rejoinder that the gardener is already paid to do his duty, and whether he is adequately remunerated or not by his wages is, in the eyes of the law, entirely a matter between himself and his employer.

It may be suggested that many employers really do not object to their gardeners receiving such presents, since it makes the latter contented with lower wages, but it is difficult to believe that employers, as a body, would deliberately choose to countenance the practice. Suppose, for example, nurserymen were to send out their catalogues or invoices with a heading to the effect that "commission at, say, 5 per cent. on the amount of all orders will be allowed to gardeners on production of their employer's written authority to receive such commission," is it likely that such authority would be forth-

coming in the majority of cases, and is it not far more probable that most employers would argue thus: "Oh, well, if the nurseryman can afford to allow my gardener 5 per cent. commission, why should he not allow it to me instead? Besides, it is only placing temptation in the man's way to let him feel that the more money he spends with my nurseryman the more he will get for himself." The effect of such an offer would probably be to excite prejudice in the employer's mind against the nurseryman suggesting it.

It will be observed that the Act also makes it an offence for any person knowingly to give to any agent, or for any agent knowingly to use with intent to deceive his principal, any receipt, account, &c., which contains any statement which is false or erroneous or defective in any material particular, and which, to his knowledge, is intended to mislead the principal. No doubt this clause is aimed at those firms who have made it a practice to supply two forms of invoice with the goods, one showing discount deducted, and the other showing the sale price in full (the latter document only being intended for the principal's inspection). It may be instructive in this connection to mention a case which occurred not very long since. An official holding a diplomatic appointment under the British Government was directed to obtain certain seeds with a view to seeing how they would grow in the locality where he was resident abroad. Accordingly he wrote to a firm of seedsmen, directing them to send him seeds to a certain value, and referred them to his solicitor in England for payment. The seedsmen actually forwarded the solicitor in question two invoices, one for the full amount, and the other containing a deduction in respect of "discount." It is scarcely necessary to explain the object with which these two invoices were forwarded!

One need hardly deal seriously with the argument that a present between a grower and a customer's buyer is on an equal footing with a "tip" to a waiter at a restaurant or a Christmas box to one's postman. One has only to recollect that the sanction of the Attorney-General or Solicitor-General has to be obtained before any prosecution can be instituted, and one cannot imagine such sanction being given in the case of a person who has given a waiter or a postman a few pence in accordance with the recognised custom of the country.

It is obvious that in any criminal prosecution under the Act for giving or receiving secret discounts the whole question as to whether the accused is "guilty" or "not guilty" will turn largely upon whether the discount is deemed to have been given or received "corruptly" (N.B.—the Act does not even say "fraudulently"), and it remains to be seen whether commercial men will care to take their chance of its being discussed at a criminal trial what the word "corruptly" means. (It is certainly significant to find that the Horticultural Trades' Association of Great Britain and Ireland and the Dublin Nursery and Seed Association have already passed unanimous resolutions deciding to discontinue the giving of private discounts to customers' gardeners.)

In considering this point of view it is impossible to disregard a certain case in which Lord Justice Romer delivered judgment in the Court of Appeal a few years ago.

The judgment itself appears to have been overlooked by many, including most of the official reporters (though fully set out in some reports). It will be well, therefore, to quote the judgment fully here.

LORD JUSTICE ROMER spoke as follows:—

"The Courts of law of this country have always strongly condemned, and, when they could, punished the bribing of agents, and have taken a strong view as to what constitutes a bribe. I believe the mercantile community as a whole appreciates and approves of the Court's views on the subject. But some persons undoubtedly hold laxer views on the subject. Not that these persons like the ugly word 'bribe,' or would excuse the giving of a bribe if that word be used, but they differ from the Courts in their view as to what constitutes a bribe. It may, therefore, be well to point out what is a bribe in the eyes of the law. Without attempting an exhaustive definition I may say that the following is one statement of what constitutes a bribe. If a gift be made to a confidential agent with the view of inducing the agent to act in favour of the donor in relation to transactions between the donor and the agent's principal, and that gift is secret as between the donor and the agent—that is to say, without the knowledge and consent of the principal—then the gift is a bribe in the view of the law. If a bribe be once established to the Court's satisfaction, then certain rules apply. Amongst them the following are now established, and, in my opinion, rightly established, in the interests of morality with the view of discouraging the practice of bribery. First, the Court will not enquire into the donor's motive in giving the bribe, nor allow evidence to be gone into as to the motive. Secondly, the Court will presume, in favour of the principal, and as against the briber and the agent bribed, that the agent was influenced by the bribe, and this presumption is irrebuttable. Thirdly, if the agent be a confidential buyer of goods for his principal from the briber, the Court will assume as against the briber that the true price of the goods as between him and the purchaser must be taken to be less than the price paid to, or charged by the vendor, by, at any rate, the amount or value of the bribe. If the purchaser alleges loss or damage beyond this, he must prove it. As to the above assumption we need not determine now whether it could in any case be rebutted. As at present advised, I think in the interests of morality the assumption should be held an irrebuttable one, but we need not finally decide this, because in the present case there is nothing to rebut the presumption."

In another civil action the Court of Appeal has emphasised the law in a way which may prove of interest to those who contend that their motives are not "corrupt." In the case in question LORD JUSTICE COLLINS said:—

"It is quite possible that the plaintiff might have honestly believed that there was no harm in a would-be vendor agreeing to give a commission to the agent of the purchaser, but his mental and moral attitude on this point could not alter the legal effect of his acts."

In another case LORD JUSTICE JAMES said:—

"According to my view of the law, I take it to be clear that any surreptitious dealing between one principal and the agent of the other principal is a fraud on such other principal cognizable in this Court."

Of course, it by no means follows that in criminal cases the Court would observe precisely the same rules as in the Civil Courts, especially having regard to the difference in penalty. Rightly enough, the law is very jealous in its protection of the liberty of the subject, and indeed it is a matter of common knowledge that Acts of Parliament dealing with criminal offences are construed far more strictly (and, therefore, with far less liberality in following the apparent intentions of an Act, as distinct from its actual wording) than in the case of statutes which deal with civil matters. At the same time the remarks of the Lords Justices above quoted are very explicit as to the view taken by the Court, in civil matters at all events, and are therefore instructive, as showing the possible trend of a judge's mind when similar facts come to be dealt with, as must inevitably occur before long, in a criminal prosecution.

There has naturally been considerable discussion in commercial circles as to whether the Prevention of Corruption Act will, or will not, have any lasting effect on commercial custom. There are some sanguine individuals who declare their opinion that the Act will practically be treated as a dead letter, and that one will find no prosecutions instituted thereunder. Others take the view that, whether or not the Act may have any lasting effect, there is no gainsaying the fact that undoubtedly criminal prosecution will be *possible*, and that so far as they are concerned, they do not care to take their chance of standing in the dock in a state of uncertainty as to whether their acts will be considered corrupt or not. Others, again, are doubtless bearing in mind that even if they may successfully emerge from a criminal prosecution, there remains a further point to be considered, viz., whether even an abortive prosecution would not seriously damage their reputation for commercial morality among their customers, that is to say, the general public. There remains, finally, a large class which considers that even apart from the question as to whether they run any risk of wearing "the broad arrow" at a future time or not, the Act furnishes a remarkable opportunity for any trade to endeavour to put an end, once and for all, to what they consider to be a pernicious practice, an opportunity, in fact, which, if neglected now, may never occur again. With all these divergent views, an article on the purely legal aspect of the case has, of course, nothing to do. The matter is one which for his own sake any trader, who has not yet made up his mind on the subject, will doubtless anxiously consider from all points of view, and having had the legal position put squarely before him, it is of course for him to decide, and decide quickly, as to the course which he proposes to adopt.

Summing up the whole position, it would seem clear that those who wish to keep on the *safe side* of the law have only one possible course before them, namely, to set their face steadfastly *against the giving or receiving of any discount, present, or commission (as between a vendor and a purchaser's agent or buyer) without the previous written consent of the agent's employer.* *H. Morgan Veitch.*

HOME CORRESPONDENCE.

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

THE BRITISH GARDENERS' ASSOCIATION.—I have noticed what Mr. T. Smith has written about young men being ready in the evening with the hand on the door ready to go home, &c., and venture to think if Mr. Smith had my experience he would be glad when that time came. Being in a medium-sized place, which is under-handed, where mostly "tinkers" are employed, and never enough done to satisfy the employer, I think he would alter his opinion as to working together towards a common end. I have to work 11 hours each day and through the "tinkers" I have duty to do myself every Sunday without extra pay, and through their ignorance of gardening I have to neglect the houses to put things in order for them outside, and they are paid nearly the same wage as myself who started when I left school at gardening in a large place. If only those still outside the professional fold would exhibit a little more *esprit de corps* and not sit on the fence so long, we should soon become a strong organisation. I think Mr Smith must admit we are about the worst-paid and best-worked body in the Kingdom at present. *A Member of the British Gardeners' Association.*

——— Mr. Smith's (of Newry) reply to the mild letter of protest from the pen of Mr. Watson, against the inclusion of amateurs in professional gardeners' associations, is in keeping with his own attitude towards gardeners. That there are "good gardeners and excellent gentlemen" amongst amateurs no one will gainsay, but the point is this: that a deep gulf lies between the two. In the case of the amateur, gardening is a hobby; in that of the professional, it is his means of living. The B.G.A. was formed to attain a definite object, viz., to raise the status of the professional gardener. The need for such an organisation as the B.G.A. has been felt for many years, but owing to the lack of initiative on the part of those best qualified for the work, it has only recently taken on a definite form. In common with other unions of workers, the B.G.A. has to contend against the suspicions of the employer and also those of a large number for whose benefit the association has been formed. As Mr. Smith says, "there are gardeners and employers who pull together in a sympathetic manner, discussing methods and working together towards a common end." True! but the "common end," in most cases, consists of improving the condition of the garden and not the condition of the gardener or gardeners. For one employer who is fair, there are many who are not. To put forward the statement that gardening is a hobby, or in other words a luxury, is mere twaddle. It is as much a necessity as motoring, racing, hunting, golf and other recreations of the employer, all of which, in spite of increased cost, are still on the increase. When an employer, with a taste for gardening, finds he cannot obtain a professional gardener unless he pays him a certain wage, he will pay him that wage. It is not to the best interests of the gardener to quarrel with the employer who is disposed to be friendly and who recognises his ability in a suitable manner. Such an employer will certainly not fall foul of the B.G.A. It is to those employers, who do not possess this tolerant spirit, and who wish to keep the gardener in his present position of dependence, that a united stand will have to be made against sooner or later. Those who have studied these matters, fully know how little has been gained without personal sacrifice on the part of the workers. It is the same in all struggles between capital and labour, no attention is paid to the appeal of the individual, but collectively the force of public opinion has often been sufficient to bring about the desired result without recourse to drastic methods. *C. T. Ratsill.*

THE CURRANT BUD GALL MITE.—My attention has been directed to a report which appears in the *Gardeners' Chronicle*, of November 24, p. 356, respecting some experiments carried out by Mr. Massee under the auspices of the Royal Horticultural Society, and, presuming that this report is correct, in common fairness to myself and other workers, I should like to draw attention to the fact—which seems to have escaped your attention and, most strange to say, Mr. Massee's also—that the discoveries (!) credited to Mr. Massee have long been in black and white, and further that the statement that "attempts to eradicate this pest

have, up to the present, proved abortive." The statement that the Hazel Bud Gall Mite does not attack the Black Currant is also incorrect. It is surely known to Mr. Massee that the life-history of Eriophyes ribis was almost completely worked out by Mr. R. Newstead in 1901 (*vide J. R. H. Soc.*, vol. xxvi.), and a further and very full account was given by Mr. E. J. Lewis early in 1902 (*Repts. S. E. Agric. Coll., Wye*, March, 1902), followed later in the same year by some valuable details by Mr. C. Warburton and Miss Embleton (*Linn. Soc. Journ. Zool.*, xxviii, p. 366); finally, in 1904 I published the results of my investigations commenced in 1899 (*Repts. on Econ. Zool.*, No. 1), and they were far from abortive, for they have resulted in the only practical cure for the pest yet put forward (*vide Ann. Rept. for 1904 and 1905*). So far as I can learn Mr. Massee has not discovered anything fresh respecting the life history of this mite. With reference to Eriophyes avellana occurring in the Black Currant buds, I published a paper in April, 1905, showing that this actually occurred (*Nature Study*, 1905), and in July, 1905 (*Proc. Ass. Econ. Biol.*, vol. i., p. 10). Without much further experience I am bound to question whether Mr. Massee is capable of differentiating the specific characters of our 35 or 36 British species of this very difficult genus of mites. Finally I question, to quote Prof. E. Ray Lankester, "Whether any man of science is justified in making statements, as though he himself had investigated and was responsible for the accuracy of these statements in virtue of his own observations on the objects described, when all the time he is simply stating what this man and that man have seen, though he omits to mention the name of any of those to whom he is indebted." I do not propose to offer any remarks upon the nature of Mr. Massee's supposed cure, but as a member of the Scientific Committee of the R.H.S. I wish to dissociate myself from work of this character, which is, I feel, not in the best interests of the society. *Walter E. Collinge, University of Birmingham.*

—Mr. Collinge cannot realise how grieved I am to learn that he has deemed it necessary, in fairness to himself and others, to take too serious a view of my remarks. He is perfectly correct in all he says. I am quite incapable of differentiating between our 35 or 36 mites, and I have not added a single fact as regards their life-history. Perhaps I ought to qualify the last statement, and say I observed that when a Black Currant mite attempted to walk on grease, it stuck fast! Trees that have been greased for the past two years have had no more "big buds," have produced a good crop of fruit, and are yet living to tell the tale. These same trees had "big bud" rampant before treatment. Did Mr. Collinge advocate grease? *G. Massee.*

BLACK CURRANT MITE: PREVENTION OF CORRUPTION ACT v. BRITISH GARDENERS' ASSOCIATION. As a fairly close reader of the *Gardeners' Chronicle* for over 45 years, I cannot recall an instance where one copy contained so much of real interest to horticulturists as that for November 24. As to Black Currant mite, if further trials go to confirm what Mr. Massee said, it will be a good thing for fruit-growers and fruit-eaters in this country.

Respecting the Prevention of Corruption Act, I sincerely hope that the bulk of my fellow horticulturists will rise to their opportunity and clear the craft for ever from the too often false imputations made with regard to it. I know from a long experience that these imputations are very often made by men whose daily lives are less free from reproach than those of hundreds of steady working gardeners, although they occupy a much higher social position. Let us show a firm but respectful front to all concerned in this matter and live the whole thing down by trying to do right. I hope I am not appearing self-righteous when I say that during over 40 years' experience as a head gardener, I never asked for a commission from anyone I have dealt with on my employer's behalf. Few, if any, began their gardening careers under less favourable auspices than I did, and yet I have managed to live and pay my way till nearly the old-age pension time, 65.

As to the British Gardeners' Association, my friends tell me I am nothing if not a critic. Well, to live up to it I must say that I have all along felt that a British Gardeners' Guild would have been more con-[illegible] all round, although I know a wise man has [illegible] laid down the axiom that there is not much [illegible]. Well, I hope that within, say, seven years, fully two-thirds of the trained gardeners in Britain will be members of the British Gardeners' Association. My life would disprove any assertion that I am in favour of causing discord betwixt employers and employed. All the same each party has rights as well as duties. Gardeners as a body have never held the position that their prolonged training, their general intelligence and good moral character have entitled them to hold. I know that in the main this has been their own fault. My opinion is that now is their opportunity to lay the foundation for an improved position in the future. See what wise examples the more far-seeing of our employers have set and are setting by joining the Country Gentlemen's Association, Army and Navy Stores, &c., &c. I repeat, that to stir up class-hatred is wholly repugnant to my nature, but I do think every honest, fairminded Englishman is entitled to join his fellow workers in trying to improve their positions in life all round. If horticulturists as a body will be but true to themselves, I can foresee a much better future for them, although I may not live to see the promised land. Imagine a Gardeners' Guild, with not fewer than ten thousand members, all having conformed to wise rules before being admitted. The headquarters to be in London, with branches in all the important cities and towns in the country. Let this Guild embrace all the principles and objects of the Gardeners' Royal Benevolent Institution, the Orphan Fund, and United Benefit Society, then we should have a federation of horticultural societies worth working hard to get, and capable of doing a great amount of good. *Yorkshire Gardener, November 27, 1906.*

BEECH AS COPPICE.—Coppice growers, who read your interesting notice of "The Trees of Great Britain and Ireland, &c.," will draw their own conclusions of the "special qualifications of the authors as foresters," when they read that "it is recommended to grow Beech for coppice and cut it every 15 or 20 years." Beech is practically unknown in Britain, and I believe also on the Continent, as coppice. A familiar acquaintance with coppice plantations in almost every county in England leaves me ignorant of one example of Beech, and I thought both owners and woodmen knew that the reason of its absence was that Beech was practically an impossible tree for coppice, because it is almost destitute of reproductive power from the stool, and dies out in 40 years or less. Oak, Ash, Alder, Sweet Chestnut and Hazel are the coppice trees, because they reproduce freely from the stool and for a long period. It is no uncommon thing to see Alder, Chestnut, Ash and Oak 6 to 10 feet high from old tree or coppice stools the second year, but who ever saw the Beech produce as many inches in the same time? See Schlich, Nisbet, Schwappach and others. *Reader.*

BLACKBIRDS AND TOMATOS.—Your report of the last meeting of the Scientific Committee of the Royal Horticultural Society mentions blackbirds in Cornwall eating Tomatos. There is no mention of place or observer, and although I fancy it alludes to an occurrence in these gardens, it seems of sufficient interest to again, and more fully, record the fact. During the past autumn I frequently saw a cock-blackbird (or birds) voraciously feasting on ripe Tomatos which were growing against a south wall in front of my house. Tomatos were plentiful, and, being interested, I took no steps to stop it, but as the weather turned colder I had some spare lights placed against the wall to assist in ripening the fruits. There was a space of about 4 inches between each light, and taking advantage of this the bird continued his feast. I feel sure the hen birds did not participate, and, judging from the quantity eaten, I should say that probably two birds were so engaged, though I never saw more than one at a time. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

PHEASANTS AND GUNNERAS.—For some time past it has been the practice here during the autumn of cutting one of the largest leaves of Gunnera manicata and spreading it on the grass near by to show its size. After a few years the pheasants, which consort in large numbers around the stream by which these giant leaves grow, took an occasional peck at them, and each succeeding year eating more. Last year they quickly demolished the cut leaf, and this year they have eaten largely of the growing leaves. But, curiously enough, they prefer the flavour of G. scabra to that of G. manicata, from which they acquired the taste. Although the leaves of G. manicata are reared on stalks 8 feet high, this preference is not to be explained on the score of accessibility, for the outer leaves of G. manicata rest on the ground. Of course the greater number of the pheasants who first tasted the Gunnera are now defunct, so that the liking for the new food must either have been transmitted to the present generation, or is due to imitation. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

THE BLANCARD FUND.—In answer to my appeal on behalf of the two grand-daughters of M. Blancard who introduced the first Chrysanthemum into Europe 117 years ago, I have to acknowledge the receipt of the sums mentioned below. As I said before these two poor old French women are living in England, and are in feeble health and straitened circumstances. Anonymous, £5; ditto, £2 2s.; Mr. C. E. Shea (President N.C.S.), £1 1s.; C. E. Pearson, 10s. 6d.; J. H. Runchman, 10s. 6d.; Mr. W. B. Reeve, 2s. 6d.; Miss Wayne, 2s. 6d.; Mr. E. Greaves, 1s. 6d.; Mrs. A. Greaves, 1s.; Amateur, 1s.; D. G., 1s.; Mons. E. Bourdelot, 1s.; Mr. J. Culpeck, 1s.; Mrs. Culpeck, 1s. Further donations are earnestly solicited and will be gladly received by *C. Harman Payne, Foreign Secretary, National Chrysanthemum Society, 141, Wellmeadow Road, Catford, S.E.*

SOCIETIES.

ROYAL HORTICULTURAL.

COLONIAL EXHIBITION.

DECEMBER 4, 5.—The sixth exhibition of Colonial produce, held on these dates under the auspices of the Royal Horticultural Society, may be ranked amongst the best of the series. The show under notice was the third during 1906, the others having been held during March and June respectively, the object of fixing the dates at these periods being to suit the seasons when the produce from the respective colonies is in the greatest degree of perfection in London. The chief honours must be given to British Columbia, for this colony had the finest exhibition in the show, apart from the supplementary exhibits of home-grown fruits. The principal fruits in the Hall were Apples and Pears; Limes, Citrons, and other members of the Orange family; Bananas, Pineapples, Cocoa-nuts, &c. There were also examples of Yams, Eddoes, Sweet Potatos, Grenadillas, and other vegetables which are articles of every-day use with our colonial friends; preserved fruits, jams, jellies, and a host of other dainty comestibles. Classes were provided for home bottled and preserved fruits and vegetables, and, judging from the appearances of those staged, our colonies have nothing finer or better to send us in this direction. The show was greatly enhanced by a fine display of hardy fruits staged by Messrs. GEO. BUNYARD, and another smaller but equally good collection staged by Messrs. CANNELL & SONS. The exhibit from British Columbia was contributed by several growers in that colony, their exhibit being almost entirely of Apples. These were displayed in boxes, baskets, and dishes, the boxes being ordinary shipments consigned to our English markets. The grading and packing were examples of how they should be done, and although the fruit had travelled over 5,000 miles, it was seen in the best possible condition. The colour in the Apples was remarkable; one variety labelled Black Twig was almost black, so deep was the shade of its red skin. With many of the varieties we are already familiar, such as Newtown Pippin, the *doyen* of its class, Northern Spy, Jonathan, and King of Tompkins' County. Spitzenberg is a very pretty variety, but we cannot tell of its other qualities. A Gold Medal was awarded the Governor General of the Colony, and a number of medals of lesser value to the individual exhibitors. The small island of Dominica sent a very large number of fruits of the genus Citrus—Limes, Lemons, Oranges, Citrons, Grape fruits, and some of the largest Shaddocks we have ever seen. (Gold Medal.)

The ROYAL MAIL STEAM PACKET CO. showed fruits such as Oranges, Bananas, Grenadillas (a gourd-like fruit), and Shaddocks, Yams, Eddoes, Sweet Potatos, &c. They also staged many exhibits from the Australian Colonies—Currants, Sultanas of exceptional quality, Prunes, Peaches,

Apricots, Citrons (preserved), and wines from New South Wales. Cereals, dried fruits, &c., from Victoria, and a small exhibit from Queensland. (Silver-Gilt Knightian Medal.)

The WEST INDIAN PRODUCE Co., 4, Fenchurch Buildings, London, E.C., was awarded a Gold medal for a large collection of West Indian preserves, sugars, cigars, cigarettes, fruits, pickles, wines, and similar articles found in the grocers' shops. The most interesting of this miscellaneous display were samples of tea, the first grown on a commercial basis in Jamaica.

The GOVERNMENT OF NOVA SCOTIA showed a small but interesting exhibit of Apples, all very fine produce and varieties easily recognisable, such as Ribston Pippin, Golden Russet, Cox's Orange Pippin, &c. A variety shown under the name of Wolf River is an exceptionally fine fruit, being very large and very beautifully coloured. (Silver-Gilt Knightian Medal.)

The BRITISH WEST INDIA CO. showed Limes, Oranges, Bananas, Cocoa-nuts, and other colonial fruits.

Other articles of interest were desiccated fruits and vegetables shown by MCDOUGALL, Ltd., Finsbury, E.C., and articles manufactured from Ramie fibre (Bœhmeria nivea), shown by Mr. D. EDWARDS RADCLYFFE, Staines, Middlesex. (Silver Knightian Medal.)

Prominent exhibitors of home bottled and preserved fruits and vegetables were Mrs. W. H. PLOWMAN, Beddington Corner, Mitcham; Major HIBBERT ASHBY, St. Ledgers, Rugby; Mr. W. POUPART, jun., Fernleigh, Belmont Road, Twickenham; and Mrs. VINCENT BANKS, 102, Park Street, Grosvenor Square.

Messrs. GEO. BUNYARD & Co.'s exhibit, a fine display, included 200 dishes of Apples and Pears. (Gold Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, staged 42 dishes of hardy fruits of high-class quality. (Silver-Gilt Banksian Medal.) Messrs. GEO. MASSEY & Co., Spalding, showed 40 varieties of Potatos and a number of clean-skinned, solid Onions.

Mr. RUSSELL, Richmond Nurseries, Richmond, had an imposing exhibit of evergreen trees and shrubs, and a fine batch of the new Buddleia asiatica in flower. (Silver-Gilt Flora Medal.)

LINNEAN SOCIETY OF LONDON.

NOVEMBER 15.—Professor W. A. Herdman, F.R.S., president, in the chair.

The Rev. T. R. R. Stebbing exhibited Mr. J. G. Pilter's Chart of the Metric System, published by the Decimal Association. He strongly commended the simplicity and clearness with which the system was presented by this graphic method, needing so few words of textual explanation.

On behalf of Mr. John Cryer, of Shipley, the General Secretary exhibited a series of 21 specimens of Polygala amarella, Crantz, selected to show its wide range of form under various conditions. The species was discovered at Grassington in May, 1902. In a communication which was sent with the plants, Mr. Cryer states that this species, which grows on the Great Scar Limestone, in the West Riding of Yorkshire, was to be seen during the past season in great abundance over a large area.

The first six specimens shown were from 3 to 8 inches high from an elevation of 750 feet; as the elevation increased, the height diminished, till the plant became less than 1 inch high.

Blue-flowered specimens were found well distributed over the whole area; white-flowered specimens were unequally dispersed; rose-coloured plants were only found in one locality, but there they were locally abundant. Spatulate rosettes of root-leaves are the winter state of the plant.

One characteristic of Polygala amarella is, that it can grow where there is but little soil for its support. Mr. Cryer has found it growing on what was almost bare rock; it has the habit of thrusting its roots into the cracks and crevices of rocks or between the stones and rocky fragments. Wherever he has found it, with one exception, there has been little or no depth of soil.

Mr. Cryer has compared P. austriaca, Crantz, a closely allied species, in Kentish localities, and points out that the latter has a less condensed habit with smaller, uniformly lilac-blue flowers, more scattered on the stem; cauline leaves smaller, less pointed at the apex, and only traces of a basal rosette of leaves.

The paper of the evening was by Mr. Horace W. Monckton, Treas. and V.P., "On the Fjærlands Fjord, Norway."

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 22.—*Committee present:* Messrs. E. Ashworth, Ashton, Cypher, Cowan, Keeling, Leemann, Ritchie, Rogers, Smith, Shill, Thorp, Warburton, Williamson, Sander, and P. Weathers (hon. sec.).

There was a magnificent display of plants at this meeting, and Mr. A. Warburton is to be congratulated on his fine display, which included many choice plants in addition to a large number of showy Orchids. (Gold Medal.)

Messrs. CYPHER & SONS, Cheltenham, also obtained a Gold Medal for a good group of plants, principally Cypripediums.

O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers) staged a magnificent group of Cypripediums, all in excellent condition, to which a special vote of thanks was awarded.

Messrs. SANDER & SONS, St. Albans, also staged an interesting group.

A FIRST-CLASS CERTIFICATE was awarded to A. WARBURTON, Esq., Haslingden, for a magnificent variety of Cattleya × Fabia var. ardentissima.

AWARDS OF MERIT were given to A. WARBURTON, Esq., for Laelio-Cattleya Clive, "Vine House var.," and L.-C. Clive var. magnifica, Cypripedium insigne var rotundiflorum and Cypripedium × Milo, "Vine House var."

One of the best hybrids yet seen, viz., Cypripedium × "King Haakon," received a First-Class Certificate.

Messrs. CHARLESWORTH & Co., Bradford, obtained an Award of Merit for Cypripedium Lord Ossulton, Heaton var. *P. W.*

BECKENHAM HORTICULTURAL.

NOVEMBER 23. At the meeting of this society, held on the above date at the Church House, Beckenham, Mr. E. J. Holland, Sutton, Surrey, gave "A Chat on Roses." Councillor Cole presided over a large and attentive audience. For fully an hour and a quarter Mr. Holland discoursed on the Rose, at first briefly on its history and subsequently on its culture.

WINTER FLOWERING CARNATION.

DECEMBER 1.—The first exhibition of the Winter Flowering Carnation Society, which was only established during the spring of the present year, was held on Tuesday last in the Royal Botanic Society's gardens, Regent's Park. The society, being so young, has every reason to be gratified with the first display made under its auspices, for the exhibits served to furnish the long corridor, and all the important classes were represented. The honorary exhibitors, all of whom were nurserymen, helped the show very greatly, and their exhibits were of much interest to visitors.

One section alone was disappointing, and that was one consisting of six classes reserved for amateurs. The society has apparently been unable as yet to infuse amateurs with an enthusiasm for competitive exhibition, but it may succeed later. We are disposed to think that the failure of amateurs to exhibit on this occasion is a striking testimonial to the value of winter-flowering Carnations. Several large amateur cultivators were present, and upon asking one of these (a member of the society) why he had not brought an exhibit, he replied: "The flowers are far too valuable at home just now."

It is a fact that the Carnation is at the present time one of the most popular of winter flowers, and although its cultivation is not a matter of any great difficulty to the skilled plantsman who has the necessary means for housing the plants suitably, at the same time, there are few, if any, gardens, where winter Carnations are yet grown so easily and so abundantly that there are more flowers than are required to meet the demand. In view of the general appreciation of this section of Carnations, it is at least remarkable that the National Carnation and Picotee Society refused to widen its scope sufficiently to include these when it was asked to do so. We believe, however, that such was the case, and the Winter Flowering Carnation Society was accordingly established. In these circumstances, it may be capable of doing much good, and it therefore deserves support. The honorary secretary, Mr. Hayward Mathias, has done much work in a short time, and we believe the society has already a membership of about 120.

Subsequent to the holding of the exhibition, a committee meeting was held at which it was shown that after providing for the expenses of the exhibition, there is a considerable balance to the good, and it was decided that another exhibition shall be held in March next at the same place. Much gratification was expressed at the liberal manner in which the Royal Botanic Society had received the society, and the arrangements made by Mr. E. F. Hawes were much appreciated.

COLLECTION OF VARIETIES.

The first class was one for a collection of cut Carnations arranged on a table space of 10 feet by 4 feet, with decorative plants or foliage used for effect. There were three exhibits staged in these conditions, and we assume that the judges awarded the 1st prize for the greater number of varieties rather than for general effect. The 1st prize collection, shown by Mr. C. T. WATERS, Balcombe, Sussex, contained most variety, but the arrangement lacked boldness, and the Asparagus foliage was not so tastefully disposed as it might have been. Several Codiæum plants of bright yellow colour were indifferently placed amongst the Carnations, where the contour of the plants, equally with the vivid yellow colour, were incongruous with the Carnation flowers, which, however, were of good quality. Mr. S. MORTIMER, Rowledge Nurseries, Farnham, who was awarded the 2nd prize, employed tall, trumpet-shaped glasses, and his exhibit had a more satisfactory effect. Messrs. H. F. M. MORRES & Co., Carlton Vineries, Guernsey, were awarded the 3rd prize.

CLASSES FOR DISTINCT COLOURS.

Each of the following classes was for 36 blooms of one variety of a stated colour.—

White.—The two varieties present in this class were Lady Bountiful in two places and Improved White Lawson. This latter variety is a sport which originated at Bexley Heath in 1904, and is said to be distinct from the White Lawson as introduced from America. It gained the 1st prize for Mr. A. F. DUTTON, Iver Nurseries, Bucks. 2nd, Messrs. BELL & SHELDON; 3rd, Mr. H. T. MASON, Hampton Hill, Middlesex.

Blush or Light Pink.—Nearly all the exhibits staged in this class were of the variety Enchantress, but the new variety Mrs. H. Burnett, shown by Mr. H. BURNETT, St. Margaret's Vineries, Guernsey, was awarded the 1st prize. It is a large flower of good form, and very deep salmon-pink colour; 2nd, Mr. A. F. DUTTON; and 3rd, Mr. A. SMITH.

Deep Pink or Rose.—The 1st prize was awarded to Mrs. T. W. Lawson, which, as shown, was nearly of magenta colour. The exhibitor was Mr. A. F. DUTTON. 2nd, Nelson Fisher, from Mr. S. MORTIMER; and 3rd, Mr. T. W. Lawson, from Messrs. BELL & SHELDON.

Crimson.—President, which obtained the first prize in this class, is a moderately-sized flower of very fine form, borne on perfectly erect stems. In shade of colour, it is very deep, but hardly so deep as Harbwarden, which gained the 2nd prize for Mr. A. F. DUTTON and the 3rd prize for Mr. S. MORTIMER.

Scarlet.—A magnificent exhibit of the variety Britannia won the 1st prize for Mr. A. SMITH, Enfield Highway.

In the following classes 18 blooms only were required of each variety.—

White.—The best variety in this class was White Perfection, one of the varieties shown in our supplementary illustration. The flowers were shown by Mr. JAS. GREEN, Reliance Nurseries, March; 2nd, Lady Bountiful, shown by Mr. S. MORTIMER; 3rd, Norway, shown by Messrs. B. and V. CRAIG.

Blush or Light Pink.—There were only two exhibits shown in this class, the varieties being Enchantress and Fair Maid. Enchantress was shown in splendid condition by Mr. HAYWARD MATHIAS, Medstead, Hants, and very easily gained the 1st prize.

Deep Pink or Rose.—The 1st prize was awarded to the variety Nelson Fisher, from Mr. JAS. GREEN, Reliance Nurseries, March. No other variety was shown in this class.

Crimson.—There was only one exhibit, and the 1st prize was awarded to Harbowarden, from Messrs. B. and V. HAIG.

Scarlet.—There were four exhibits in this class, and the variety Robert Craig was shown in two instances, those from Messrs. BELL & SHELDON gaining the 1st prize. Flamingo, from Mr. S. MORTIMER, and Robert Craig, from Mr. MATHIAS, were placed 2nd and 3rd respectively. Mr. DUTTON exhibited Xmas Eve, a very good variety in colour of flower and habit of growth.

Any other Colour, or "Fancy."—The 1st prize was gained by a "fancy" named Mrs. M. A. Patten, shown by Mr. S. MORTIMER. The flowers are white, striped with rose colour.

DECORATIVE EXHIBITS.

The classes that had been arranged for Carnations in various forms of decoration were only very moderately supported. Mr. J. C. KENWARD, 151, High Street, Lewes, won the 1st prizes for a bouquet of Carnations, for three ladies' sprays, and for six gentlemen's button-hole bouquets. Messrs. B. and V. HAIG, Maidenhead, were awarded 1st prizes for a vase of Carnations showing the new, rich-pink coloured Mrs. H. Burnett, and 2nd prizes for six gentlemen's buttonhole bouquets and three ladies' spray bouquets. There was nothing unusual in these exhibits, but the reader needs no reminder that Carnations are amongst the most convenient, as they are also amongst the most effective flowers for the florist's use.

CERTIFICATED VARIETIES.

First Class Certificates were awarded to the two varieties mentioned below:—

Carnation Britannia.—This excellent variety was described in our columns on March 24 last, p. 190, after it had received an Award of Merit from the R.H.S. It is of bright reddish-crimson colour, and in the judging by the Floral Committee of the Winter Flowering Carnation Society was awarded full points for all qualities excepting that of fragrance. Shown by Mr. A. SMITH, Enfield, raiser of this variety.

Carnation Mrs. H. Burnett.—A description of this flower was published in our issue for February 17 last, and it gained a R.H.S. Award of Merit on February 13. The flowers are of considerable size, good form, and the petals are only slightly fringed. The rich shade of pink colour is charming. Shown by Mr. H. BURNETT, Guernsey.

NON-COMPETITIVE EXHIBITS.

Mr. H. BURNETT, St. Margaret's Vineries, Guernsey, made an admirable display, the flowers and foliage being of the best types. Enchantress, Mrs. H. Burnett (new), and Mrs. T. W. Lawson were the three varieties exhibited in best condition. Two vases containing flowers of unnamed seedling varieties were interesting, and one variety was included that went a considerable way towards being yellow. (Gold Medal.)

Messrs. W. CUTBUSH & SONS, Highgate, London, N., gave prominence in their exhibit to the varieties Robert Craig (see supplementary illustration), President, a deeply-coloured crimson-maroon flower, Nelson Fisher, rose-coloured, and Enchantress. In smaller vases the new white Mrs. Robert Norman (see supplementary illustration), Duchess of Portland, Crimson Glow, St. Louis, White Perfection (see supplementary illustration), and others were shown well. (Large Silver-Gilt Medal.)

Mr. A. F. DUTTON had some charming flowers. Those of Fair Maid were really beautiful specimens of this delicately coloured pink variety. Mrs. T. W. Lawson was shown well, also Governor Wolcott (white), Lieut. Peary (white), White Lawson, Robert Craig, White Perfection, Cardinal and Lady Bountiful. (Silver-Gilt Medal.)

A magnificent display of "Britannia," the excellent new crimson variety, was made by Mr. A. SMITH, Enfield Highway. The group included 16 trumpet-shaped glasses, some of which had two dozen flowers in each. Growing plants were also shown, and these exhibited a commendable habit. (Special Gold Medal.)

Messrs. BELL & SHELDON, Castel Nurseries, Guernsey, showed an extensive collection of flowers, but some of them, especially those of Enchantress, were drooping to an extent that lessened their good effect. Mrs. T. W. Lawson appeared better than most varieties in this exhibit. (Large Silver Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, arranged an extensive display of flowers on one of the stages in the large conservatory. We noticed in this exhibit the varieties Oriflamme, Floriana, Lady Bountiful, Robert Craig, White Perfection, and Mauvina. The variety known by the last-mentioned name has flowers of a peculiar shade of mauve or purple colour, very similar to the colour common to the flowers of some of the Cattleyas. (Large Silver-Gilt Medal.)

Messrs. HEATH & SON, Cheltenham, showed a group of Carnation flowers. Messrs. F. S. WARE (1902), Ltd., Feltham, Middlesex, and Mr. G. LANCE, nurseryman, Hampton Hill, Middlesex, also staged collections of flowers in which the popular varieties were included.

NATIONAL CHRYSANTHEMUM.

DECEMBER 5, 6.—The early winter exhibition of the above society was held on these dates in the Crystal Palace, Sydenham. Competition in most of the classes was not keen, and the number of entries was below that of last year, although slightly in excess of that of 1904. The weather on the opening day was fine, but the attendance of the public was meagre. Taken collectively, the exhibits made a pretty display, and especially fine was a large non-competitive exhibit staged by Mr. H. J. Jones, Lewisham. Several new varieties were presented for awards, but none was granted.

GROUP CLASSES.

A class was provided for a semi-circular group of Chrysanthemums and miscellaneous flowering and foliage plants, occupying an area of 14 feet by 7 feet. The only exhibit was that staged by Mr. R. FORSTER, Nunhead Cemetery, S.E., who mingled Euphorbias (Poinsettas), Narcissi, Cypripediums, and Roman Hyacinths among creditable plants of Japanese Chrysanthemums, with Ferns, Palms, Grevillea robusta, and other suitable greenery. This group was awarded the 1st prize.

The other principal class for plants, that for a collection of flowering, berried, and ornamental leaved subjects was also represented by one exhibit only. This was staged by Mr. WM. HOWE (gr. to Lady TATE, Park Hill, Streatham Common). It was a very pretty combination of Begonias, Lilliums, Roman Hyacinths, Lily of the Valley, &c., with sprays of Callicarpa purpurea and Solanums in fruit, the whole being set off by graceful greenhouse foliage plants. Mr. HOWE was awarded the 1st prize.

Some good Begonias were seen in a class for these plants, the best being those displayed by F. A. BEVAN, Esq., Trent Park, New Barnet, who had compact, freely-flowered examples of the well-known Gloire de Lorraine variety.

CUT BLOOMS. OPEN CLASSES.

Japanese varieties.—The most important class was that for twenty-four blooms in not fewer than eighteen varieties, and this proved the most interesting and one of the best-contested classes in the whole show. Five exhibits were staged, and good quality obtained throughout the whole of the displays, but Miss WILLMOTT, Warley Place, Great Warley, Essex, had the better examples, and was awarded the 1st prize. A contributing factor to this decision was a magnificent example of the white Mad. R. Oberthur. Mrs. G. Mileham, J. H. Silsbury, W. H. Whitehouse, Mary Inglis, and General Hutton were also shown well in a group that was remarkable for its brightness of colour. 2nd, PANTIA RALLI, Esq., Ashtead Park, Epsom (gr. Mr. G. Hunt), who showed many white varieties. The example of Miss Miriam Hankey was his best flower. 3rd, W. W. MANN, Esq., Ravenswood, Bexley, Kent, some of whose flowers were very fine, especially his yellow varieties.

The two smaller classes for Japanese varieties, those for twelve and for six blooms respectively, were in each case contested by two growers only. PANTIA RALLI, Esq., won easily in the larger class, and Mr. W. G. PREDDEN-CLARK, 4, York Road, Hitchin, was to the fore in the smaller. Mr. PANTIA RALLI's back row contained four very choice flowers in Mad. Carnot, Miss Miriam Hankey, F. S. Vallis, and Mary Inglis. The dozen would have been enhanced the inclusion of a few brighter-coloured varieties.

Incurved varieties.—Six exhibits were staged in the class for twelve Incurved varieties, and of this number three were good and three were inferior. PANTIA RALLI, Esq., Ashtead Park (gr. Mr. G. Hunt), was placed 1st for very excellent flowers, including Mdlle. Lucy Faure, Jaime, The Egyptian, Miss E. Seward, and Doris Raynor. 2nd, Miss WILLMOTT, Warley (gr. Mr. J. Preece).

Chrysanthemums in Vases.—Only one exhibit was forthcoming in the class for twelve vases of Chrysanthemums in not fewer than six varieties, and this was awarded the 1st prize. It was staged by Mr. G. HEMMING, Alexandra Palace, London, N. Many of the varieties were wrongly labelled, and the flowers generally were small. The brightest was the deep yellow "Allman's Yellow," shown without disbudding, a remarkably effective variety for the border.

Twenty-four bunches of Chrysanthemums, any section.—Mr. HOWE had the best display among two, his opponent being Mr. G. HEMMING, the winner of the preceding class. Mr. HOWE had a very creditable exhibit, that embraced Japanese, Singles, Incurveds, border varieties, &c. Mrs. E. Beckett, a large "single" with pure white florets, was shown well, and also the large yellow Japanese variety Beauty of Leigh. Mr. HEMMING, who was awarded the 2nd prize, had a pretty display of small flowering varieties.

Six bunches of Japanese Chrysanthemums.—Three blooms constituted a bunch, and six distinct varieties were called for. By far the better exhibit of two was that shown by A. M. NATHAN, Esq., Little Heath Wood, Potters Bar (gr. Mr. W. Newton). He showed good examples of Duchess of Sutherland, Mr. F. S. Vallis, and the deep red variety named after Lord Hopetoun.

Single varieties.—These were staged on separate tables, each exhibit consisting of twelve bunches in vases, and arranged with any suitable foliage. The tables, each of which measured 8 feet by 3 feet, were draped with white tablecloths. The largest flowers were awarded the premier prize, these being shown by E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson). The pink Edith Pagram was in excellent condition, and did not flag like many of the other varieties. 2nd, Mr. W. C. PAGRAM, The Whim Gardens, Weybridge.

Decorative, Thread-Petalled or Plumed Chrysanthemums.—Mr. G. HEMMING won with an assortment of thread-petalled varieties, such as Mrs. Filkins, Alice Carter, King of the Plumes, &c., and he was followed by Mr. W. C. Pagram (gr. to J. COURTENAY, Esq., The Whim, Weybridge).

Small-Flowered Pompon Chrysanthemums.—Mr. D. B. CRANE, 4, Woodview Terrace, Archway Road, Highgate, N., had the best of these miniature flowers. 2nd, Mr. W. C. PAGRAM.

AMATEUR'S CLASSES.

Twelve Japanese blooms, distinct.—Only two exhibits were seen, the better a very creditable dozen flowers, being exhibited by Mr. C. B. GABRIEL, Eardale, Horsell, Surrey. The deep yellow-coloured General Hutton was especially well shown in this group, which also included good examples of W. R. Church, Valerie Greenham, Mrs. F. Vallis, &c.

Six Japanese blooms, distinct.—This was a better contested class, and the premier exhibit among five was shown by E. M. MOUNTAIN, Esq., West Dulwich (gr. Mr. H. Dodd). Mr. MOUNTAIN showed a beautiful flower of the delicately-tinted variety Florence Penfold. 2nd, W. BRANDER, Esq., 13, Crescent Wood Road, Sydenham Hill.

Decorative classes.—Miss C. B. COLE, The Vineyard, Feltham, was the most successful exhibitor. She showed the best large vase of Chrysanthemums tastefully arranged with any kind of foliage, the best vase of Pompon Chrysanthemums similarly decorated, and the best hand basket of Chrysanthemums.

Non-competitive exhibits.—Mr. H. J. JONES, Hither Green, Lewisham, again excelled with a magnificent group of Chrysanthemum

blooms, arranged in the best decorative style. Very large and beautiful vases, with epergnes and tripods were filled with choice flowers of such noted varieties as Mrs. Swinburne, Mad. Charvet, Mad. R. Oberthur, Mrs. Beech, &c. A tripod filled with the white Moneymaker and pink Winter Cheer formed a charming combination of colours. There were also numerous individual blooms in small vases, among which we noticed the new deep-yellow variety Mrs. Tom Fagg. The whole was carpeted with a green material and edged and interspersed with Palms and Ferns. (Large Gold Medal.)

Mr. PHILIP LADDS, Swanley Junction, Kent, had an exhibit of market varieties of Chrysanthemums of remarkable quality, indeed many of the flowers were up to the best exhibition standard. (Small Gold Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a very large display of Chrysanthemums in vases, and a bright collection of Zonal Pelargoniums. (Small Gold Medal.)

Messrs. W. WELLS & Co., Merstham, showed Chrysanthemums of all types, among which were most of the latest novelties. (Silver Medal.)

Mr. FORSTER, Nunhead Cemetery, showed a semi-circular group of Chrysanthemums and other plants. (Silver Medal.)

Messrs. JOHN PEED & SON, West Norwood, displayed a very fine group of Chrysanthemums, principally large Japanese varieties. (Silver-Gilt Medal.)

Messrs. JOHN LAING & SONS, Forest Hill, London, filled a table with well-grown Codiæums (Crotons) interspersed with Ferns. (Silver Medal.)

Exhibits of Carnations were staged by Mr. S. MORTIMER, Rowledge, Farnham, Surrey (Silver Medal), and by Messrs. W. CUTBUSH & SON, Highgate, London, W. (Silver-Gilt Medal.)

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending, December 5.

A very warm fortnight. During the last 15 days all the days have been warm, and most of them very warm for the time of year, and the same may be said of the nights, which with two exceptions were also unseasonably warm. On the coldest of the two cold nights the thermometer exposed on the lawn showed 10° of frost. The ground is also now very warm, the temperature at 2 feet deep being 1° warmer, and at 1 foot deep 5° warmer, than is seasonable. On the 1st the reading at 2 feet deep was 48°, which is with one exception (1898) the highest I have yet recorded here in December. The last fortnight has not only been very warm, but also very dry: the total rainfall being less than a tenth of an inch. The effect of this dry weather is shown by the soil gauges, through neither of which has there been any measurable percolation for several days. The sun shone on an average for one and a half hours a day, or for 10 minutes a day longer than is usual at this season. During the past week the winds have been high, but in the windiest hour the mean velocity was only 21 miles—direction W.N.W. The average amount of moisture in the air at 3 o'clock in the afternoon was as much as 11 per cent. less than a seasonable quantity for that hour.

NOVEMBER.

Exceptionally warm and very wet.—This was an exceptionally warm November, in fact, there have been only four warmer in the last 20 years. On the warmest day the exposed thermometer rose to 60°, which is the highest ever recorded here so late in the month. On the coldest night the exposed thermometer only registered 11° of frost—a very high minimum reading for the month. Rain fell on 16 days, to the total depth of 3¾ inches, which is nearly an inch in excess of the November average. The last 10 days were virtually dry, so that the whole of that amount may be said to have been deposited during the first three weeks of the month. Owing to the heavy rainfall in October, the percolation through the bare soil gauge exceeded the average by one gallon—that gauge being a yard square. The sun shone brightly on an average for one hour thirty-five minutes a day, which is about ten minutes a day short of a seasonable duration. The winds were light during the first half of the month, but high in the latter half. In the windiest hour the mean velocity was 20 miles—direction W.S.W. The amount of moisture in the air at 3 p.m. was about average, and there were but few foggy days.

THE AUTUMN.

Singularly warm and very wet.—With the exception of 1898 this was the warmest autumn in the last 20 years. Each of the three months proved unusually warm. The fall of rain exceeded the average by 2¼ inches, notwithstanding the light rainfall in September. Although October and November were so exceptionally wet, taking the total falls for the two months together, there have been in the last 50 years five instances in which the last two autumn months have been wetter, and several others nearly as wet. This comes out as a sunny autumn, owing to the splendid record of sunshine in September, for October and November were both rather dull.

OUR UNDERGROUND WATER SUPPLY.

Since the winter half of the drainage year began in October the rainfall of the first two months of it has exceeded the average by 3¼ inches, which is equivalent to an excess of 18,724 gallons on each acre in this district. *E. M., Berkhamsted, December 5, 1906.*

MARKETS.

COVENT GARDEN, December 5.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Azalea Fielderi, per dozen bunches	3 0	6 0
— mollis, p. bch.	0 9	1 0
Anemones, per dz. bunches	2 6	3 0
Bouvardia, per dz. bunches	4 0	6 0
Calla æthiopica, per dozen	3 0	5 0
Camellias, white, per dozen	2 0	3 0
Carnations, per dozen blooms, best American varieties	2 0	4 0
— smaller, per doz. bunches	6 0	9 0
Cattleyas, per doz. blooms	8 0	10 0
Christmas Roses, doz. blooms	1 0	2 0
Chrysanthemums, specimen blms.	4 0	9 0
— per dz. blooms	1 6	4 0
— small blooms, per doz. bchs.	3 0	9 0
Daffodils, per bch.	1 0	1 6
Eucharis grandiflora, per doz. blooms	2 0	3 6
Gardenias, per doz. blooms	1 6	2 6
Gypsophilia elegans, dz. bchs.	2 0	3 0
Heather, white, pt. doz. bunches	3 0	6 0
Hyacinth (Roman), p. dz. bunches	6 0	12 0
Lilac, white, p. bch.	3 0	5 0
Lilium auratum	3 0	4 0
— lancifolium, rubrum and album	2 0	3 0
— longiflorum	3 0	5 0
Lily of the Valley, p. dz. bunches	5 0	8 0
— extra quality	12 0	18 0
Marguerites, white, p. dz. bunches	2 0	3 0
— yellow, per dz. bunches	2 0	3 0
Mignonette, per dz. bunches	2 0	3 0
Narcissus, paper white, per doz. bunches	2 0	2 6
— English	3 0	4 0
— Soleil d'Or, per dozen bunches	3 0	4 0
Odontoglossum crispum, per dozen blooms	2 6	3 0
Pancratiums, doz. lls.	3 0	4 0
Pelargoniums, show, per doz. bunches	3 0	5 0
— Zonal, double scarlet	4 0	5 0
Primula (double white), dozen bunches	4 0	6 0
Ranunculus, per dozen bunches	6 0	9 0
Roses, 12 blooms, Niphetos	1 6	2 6
— Bridesmaid	1 6	2 6
— Kaiserin A. Victoria	1 6	3 0
— Caroline Testout	1 6	3 0
— C. Mermet	1 6	2 6
— Liberty	4 0	6 0
— Mad. Chatenay	3 0	6 0
— Mrs. J. Laing	2 6	3 0
Statice, p. dz. bchs.	4 0	6 0
Stephanotis, per dozen trusses	4 0	6 0
Tuberose, per dz. blooms	0 4	0 6
Tulips, per dozen	1 0	1 6
Violets, per dozen bunches	1 6	3 0
— Parma, p. bch.	2 0	3 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, doz. bun.	4 0	6 0
Asparagus plumosus, long trails, per doz.	4 0	8 0
— — medium, bunch	1 6	2 0
— — short sprays per bunch	0 6	0 9
— Sprengeri	0 6	1 0
Berberis, p. bunch	2 0	2 6
Croton leaves, per bunch	1 0	1 6
Cycas leaves, each	1 6	2 0
Fern, English, p. dozen bunches	2 0	3 0
— French, doz. bunches	2 0	4 0
Hardy foliage (various), per dozen bunches	3 0	9 0
Ivy leaves, loose	1 6	2 0
— long trails per bundle	1 0	2 0
— short green, doz. bunches	2 0	3 0
Moss, per gross	4 0	5 0
Myrtle, doz. bchs.	2 0	5 0
Pernettya, with berries, per bunch	0 1	1 0
Smilax, doz trails	2 0	3 0

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

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, per dozen	4 0	6 0
— larger	9 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	18 0	30 0
— variegated, per dozen	30 0	42 0
Asparagus plumosus nanus, doz.	6 0	9 0
— Sprengeri, doz.	8 0	10 0
— tenuissimus per dozen	8 0	10 0
Azaleas (Indica vars.), per doz.	30 0	42 0
Begonia Gloire de Lorraine, p. dz.	8 0	12 0
— Turnford Hall, per dozen	8 0	10 0
Bouvardias, per dz.	4 0	6 0
Chrysanthemums, best, per doz.	9 0	18 0
— smaller, per doz.	5 0	8 0
Clematis, per doz.	8 0	9 0
— in flower	9 0	12 0
Cocos Weddelliana, per dozen	9 0	18 0
Crotons, per dozen	12 0	30 0
Cyclamen, per dz.	10 0	15 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz.	4 0	5 0
Dracænas, per doz.	9 0	21 0
Erica cuffra	9 0	12 0
— hyemalis, p. dz.	12 0	15 0
— gracilis, p. dz.	10 0	15 0
Erica nivalis	18 0	24 0
Eucharis, per dz.	4 0	9 0
Ferns, in thumbs, per 100	7 0	10 0
— in small and large 60's	16 0	25 0
— in 48's, per dozen	1 0	10 0
— in 32's, per dozen	16 0	18 0
Ficus elastica, dz.	8 0	12 0
repens, per doz.	4 0	6 0
Kentia Belmoreana, per dozen	12 0	18 0
— Forsteriana, per dozen	12 0	21 0
Latania borbonica, per dozen	12 0	18 0
Lilium longiflorum, per dz.	18 0	30 0
— lancifolium, per dozen	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0
Marguerites, white, per dozen	5 0	8 0
Orange trees in fruit, each	3 6	5 0
Physalis Franchetti, each	1 6	3 6
Poinsettias, per dz.	9 0	12 0
Primulas, per doz.	4 0	5 0
Roses, per dozen	12 0	18 0
Selaginella, dozen	4 0	6 0
Solanum capsicastrum, per doz.	5 0	12 0
Spiræa japonica, per dozen	8 0	12 0
Veronicas, per doz.	3 0	6 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples, Nova Scotian:		
— Russets	18 0	20 0
— Greenings	16 0	17 0
— Starks	14 0	15 0
— Baldwins	14 6	16 0
— Blenheims, per barrel	17 0	20 0
— Emperors, per barrel	12 6	14 0
Ribstons, per barrel	16 6	18 0
— King of the Pippins	16 0	18 0
— English, ½ bus.	3 0	10 0
— English, per bushel (16 lbs. to 50 lbs.)	6 0	7 0
— Newtown Pippins, per case	10 6	16 0
Canadian, per barrel:		
— Russets	21 0	23 0
— Greenings	17 6	19 0
— Ben Davis	15 0	16 0
— Baldwins	15 0	17 6
Avocado Pears	6 0	12 0
Bananas, bunch:		
— West Indian, red	7 0	—
— No. 1	6 6	7 6
— No. 2	5 6	6 0
— Extra	8 0	10 0
— Giants	10 0	12 0
— Jamaica	4 6	6 0
— Loose, per dz.	0 9	1 0
Blackberries, peck	1 6	2 6
Cranberries, p. case	12 0	—
Custard Apples, per dozen	4 0	12 0
Dates (Tunis), doz. boxes	4 6	—
Figs, per dozen	1 0	1 3
— Italian, box	0 6	0 9
— French, p. box	0 6	0 8
Granadillas, dozen	2 0	2 6
Grape Fruit, case	6 6	10 0
Grapes (English), — Black Hambro, per lb.	0 6	1 0
— Alicante, p. lb.	0 7	1 6
— Gros Colmar, per lb.	0 8	1 6
Grapes, Muscat, per lb.	1 0	4 0
— Almeria, barrels	12 0	18 0
Lemons:		
— Messina, case	11 6	17 6
Lychees, per box	1 0	1 2
Mandarines, case	0 8	1 6
Mangos, per dozen	3 6	6 0
Medlars, per case	10 0	—
Nuts, Cobnuts, per doz. lb.	6 0	6 6
— Almonds, bags	48 0	—
— Brazils, new, per cwt.	65 0	70 0
— Barcelona, per bag	32 6	—
— Walnuts, per Grenoble bags	4 6	5 6
— Cocoanuts, 100	10 6	13 6
— Chestnuts, Reddon bags	10 0	11 0
— Italian bags	13 0	15 0
Oranges, per case: — Valencia	8 0	20 0
— Jamaica	10 6	12 0
Pears (English), ½ sieve	2 0	3 6
— English, per bushel (56 lbs.)	4 0	7 0
— Doyenne du Comice, p. dz.	4 0	10 0
— American, barrels	20 0	—
— French, Williams, boxes	6 0	10 0
— French, Glouts, crates	5 0	5 6
— Californian, pr. case	12 6	—
Persimmons, per box	1 3	2 0
Pineapples, each	2 6	3 3
Plums (English), ½ sieve (28 lbs.)	7 0	8 0
— French, box	0 8	1 3
— French, ½ sieve	3 0	—
— Californian, boxes	6 0	8 0
Pomegranates, boxes	2 0	2 6
— cases	8 0	11 0
Quinces, per box	3 0	—

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen	3 6	—
Asparagus, Sprue French, bundle	0 7	0 8
— Paris Green, bundle	3 6	4 0
Beans (Jersey), per lb.	1 0	1 3
— Haricots, per box	1 0	—
Beetroot, bushel	1 3	—
Brussels Sprouts, per ½ bushel	1 0	1 6
Cabbages, per mat	2 0	2 6
— red, per dozen	2 0	—
Carrots, French pad	3 0	—
— per bag, unwashed	1 6	2 0
— washed	2 6	—
Cauliflowers, p. tally	4 0	6 0
Celeriac, per doz.	1 6	—
Celery, p. dz. bchs.	3 0	12 0
Chicory per lb.	0 3	—
Chou Chou, p. dz.	3 0	—
Cucumbers, p. doz.	8 0	12 0
Endive, per dozen	1 0	1 6
Horseradish, foreign, per dozen bundles	15 0	—
Leeks, 12 bundles	1 0	2 0
Lettuces (French), per dozen	0 9	1 0
— French Cos	4 0	4 6
Mint, per dozen	3 0	4 0
Mushrooms (house) per lb.	0 10	1 0
— Buttons, per lb.	1 0	—
Mustard and Cress, per dozen pun.	1 0	1 6
Onions (Valencia), case	6 0	—
— Egyptian, bag	3 6	4
— pickling, per bushel	3 0	—
— French, ½ bags	2 6	—
— Dutch, bag	3 3	—
Parsley, 12 bunches	2 0	2 6
— ½ bushel	1 0	2 0
Parsnips, per bu-h.	2 0	—
— per bag	3 6	—
Potatos (French), crates, per lb.	0 8	—
Radishes (French), per dozen	1 6	—
Salsafy, per dozen bundles	3 6	—
Savoys, per mat	1 6	2 0
Seakale, doz. pts.	12 0	—
Tomatos — — Canary, per bundle	16 0	18 0
Turnips, per cwt.	2 6	—
— tops	2 6	—
— washed, cwt.	3 0	—
Watercress, per doz. bunches	0 4	0 6

REMARKS.—The trade for good Grapes is good; Muscats are dearer. Jersey Beans are a little cheaper. Foreign Tomatos do not, at present, constitute a regular supply. Red or purple skinned Bananas are expected to arrive next week. Trade generally is good. *E. H. K., Covent Garden, Wednesday, December 5, 1906.*

POTATOS.

Bedfords, 65s. to 70s.; Blacklands, 60s. to 70s.; Kents, 70s. to 80s.; Lincolns, 70s. to 80s. Arrivals of tubers are not heavy, and prices are steadily advancing. Trade is slow except for the best samples. *John Bath, 52-54, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Trade does not improve much, but a few extra plants are being sold for country orders. Chrysanthemums continue plentiful, but some of the best cultivators have nearly finished for the season. Among the best sorts seen are A. J. Balfour, Western King, Phœbus, and Framfield Pink. Source d'Or is also good, but the flowers are rather small. Lilacs are still abundant. Begonia Gloire de Lorraine and the white variety are both seen in excellent plants. The sale of Poinsettias has been very slow. Indian Azaleas, from Mr. Griffin, Mr. H. Williams, and Mr. Rooke, are good. Daffodils (Narcissus obvallaris) and Tulips in boxes are to be had, but the latter have rather weak flower spikes. Lily of the Valley and Spiræas are both good. Rose Madame Levavasseur, from Messrs. T. Rochford & Sons, Ltd., is very good. This Rose is now available nearly the whole year through. Marguerites are plentiful and good. Chinese Primulas and Primula obconica are seen. Solanums are plentiful and cheap. Among Palms, Kentia Fosteriana and K. Belmoreana in all sizes, fine specimens in 60's pots to very large specimens, are supplied.

Aspidistras, both green and variegated, are very good. Aralia Sieboldi and the improved A. S. Moseri are good Ferns in all the usual market sorts are abundant.

CUT FLOWERS.

Chrysanthemums seen are of better quality. Prices for Liliums have fallen a little. Callas are also cheaper. Lucharis and Pancratiums are plentiful, as also Camellias and Tuberoses. The flowers of Narcissus obvallaris are lacking in substance. Paper White Narcissus from English growers are much better than those imported. Violets are plentiful and good. Roses are realising rather better prices. Madame Chateray is now extensively grown, and I find it is much appreciated by the West-end florists. Carnations vary much in quality. Britannia is the best scarlet variety in the market, and this is almost all sold in advance. *A. H., Covent Garden Market, December 5, 1906.*

LAND TENURE BILL.—From the proceedings in the House of Lords on Wednesday last it would appear that the interests of the nurserymen will receive attention.

Obituary.

THE LATE WILLIAM PARNELL.—Readers of the *Gardeners' Chronicle* who are acquainted with Glasnevin, and especially those who are interested in hardy plants, will be sorry to learn of the death of William Parnell, the general out-door foreman, which was briefly announced in our last issue. He died on Wednesday, 28th ult., after a somewhat protracted illness. He had held the position of out-door foreman for a period of 38 years since the date of his appointment on November 1, 1868. William Parnell began his gardening career at Glasnevin in 1863, and at once commenced the study of hardy plants, and of British plants. He afterwards went to Kew, where he continued his studies, and made such progress that when the late Mr. Bentham was working up material for his *British Flora*, he applied for an assistant, and young Parnell was recommended for that purpose. Having finished his work with Bentham he returned for a second period to the garden, and subsequently came back to Ireland as gardener to Mr. Hone, of St. Dolough's, and from there he came to Glasnevin as general out-door foreman. He was a keen observer of hardy plants, and knew them thoroughly, the critical training he had had under Bentham being of the greatest service to him, and he made full use of his training and of his knowledge. He was of a quiet and retiring disposition, and therefore was not so well known as he deserved to have been. He was a true friend to the men under him, and promoted their welfare in every way open to him, especially by urging them to study and to improve themselves. He passed away, aged 74 years, regretted by all who knew him, and respected by the officers of the department under which he served.

ENQUIRIES AND REPLIES.

VIOLETS.—*Heath's Violet Culture* was printed and published in 1889 by Wm. Birkett of Kendal, price 6d. It is probably out of print. There is an American book *How to Make Money Growing Violets*, by Saltford, published in 1902. Also another American pamphlet *Little Points in Violet Culture*, published 1902. Also Dr. Galloway's *Commercial Violet Culture*, published at $1-50c. 224 pages, illustrated.

ANSWERS TO CORRESPONDENTS.

AILANTHUS: *An Old Correspondent* is respectfully reminded that Ailantus is incorrect and Ailanthus is correct etymologically. It is the spelling adopted in the *Index Kewensis*.

BAMBOOS: *B. L.* We should think that if the flooding of the Bamboos only lasted a week or so at a time they would suffer no harm. Some of the best Bamboos in this country are growing by the side of ponds, &c., with the roots partially in the water. From your experience with *B. Metake* we should judge that *Arundinaria fastuosa*, *A. nitida*, *A. Simonii*, *Phyllostachys viridi-glaucescens*, *P. Henonis*, and *P. aurea* would certainly succeed in the same position. Whether these Bamboos would stand immersion for periods of a month or two is doubtful, and would have to be tested by experience. We have no knowledge of any Bamboos grown under such conditions.

BIRMINGHAM SHOW: *P. and S.* We have referred the matter to our representative, who sees no reason to alter his expressed opinion.

BOOK: *N. L. The Royal Parks and Gardens of London.* Write to the publisher of the *Journal of Horticulture*, Office, 12, Mitre Court Chambers, Fleet Street, E.C.

BRITISH GARDENERS' ASSOCIATION: *C. H.* The words you attribute to Mr. Watson were written by another correspondent a year or more ago. See *Gardeners' Chronicle*, June 10, 1905, p. 362. You cannot do better than join the society at once. In respect to your questions touching the Gardeners' Royal Benevolent Institution and the United Horticultural Benefit and Provident Association, we strongly advise you to join both institutions, for each is doing good and distinct work. The former is a charity, the latter a self-help society.

CAMELLIA FLOWERS: *P. F. P.* Apply to one of the flower salesmen at Covent Garden Market.

CELERY: *Vandon.* The plants have been given too much manure and too much water, which has resulted in such excessive growth that they appear diseased.

CORRECTION (see paragraph on p. 373). Mr. David W. Thomson's nursery is known as Windlestrawlee Nursery, Granton Road, Edinburgh.

FRUIT-GROWING ABROAD: *W. F.* Read the letter printed under "Colonial Notes," on p. 384, also see articles in *Gardeners' Chronicle* March 4, 1905, p. 141, and September 15, 1906, p. 189.

GRAPES: *J. McG.* The injury is caused by Mildew *Plasmopora viticola*, the mycelium of which enters the berries and checks development. Spraying with Bordeaux mixture is a certain remedy.

LOW PRESSURE BOILERS: *V. Chaon.* Any of the sectional tubular boilers advertised from time to time in the pages of this journal will answer the purposes indicated in your note of enquiry. We know of instances where green-houses, basement and second and third floor offices are efficiently heated by the same tubular boiler, and in more than one old castle known to us, a horizontal tubular boiler fixed under the ground-floor is used to heat the basement apartments, and the rooms and corridors on the several landings throughout the buildings with the most satisfactory results, the desired degree of heat in every case being regulated by a series of valves fixed on the flow pipes on the different landings and by good stoking. If boilers of sufficient power to efficiently heat the number of feet of piping attached thereto are properly fixed, and the pipes and valves duly arranged, no difficulty need be apprehended. As regards your fourth and last question, we need only say that all the heating apparatuses referred to are economical in the consumption of fuel, whether it consists of wood, coke or anthracite coal. They—the Strebel, the Quorn, the Robin Hood, the White Rose, the Low Eclipse, Upright and Horizontal Tubulars, &c., are all efficient in heating power, and fuel economisers when properly stoked.

NAMES OF FRUITS: *W. H. B.* 1, Hacon's Incomparable; 2, Scarlet Golden Pippin; 3, Herefordshire Pearmain; 4, Claygate Pearmain.—*F. Eade.* Blenheim Pippin.—*E. Wood.* 1, Old Nonsuch; 2, Waltham Abbey Seedling; 3, Ribston Pippin.—*W. A.* 1, Reinette du Canada; 2, Golden Nonpareil; 3, Wyken Pippin; 4, Golden Noble; 5, Cellini; 6, Claygate Pearmain.—*J. S.* 1, Irish Pitcher; 2, Golden Noble; 3, London Pippin; 4, Reinette du Caux; 5, St. Edmund's Pippin; 6, Reinette du Canada. It is impossible to name the Pear with certainty, as it is such a deformed fruit. It may be Uvedale's St. Germains.—*C. W. Taylor.* King of the Pippins.—*Zola.* 1, Blenheim Pippin; 2, Dumelow's Seedling (Wellington).

NAMES OF PLANTS: *H. W. C.* 5, Ilex crenata var. microphylla.—*Common Spruce.* 1, Picea excelsa; 2, Cupressus Corneyana; 3, Cupressus Goveniana; 4, Podocarpus chilina; 5, Spruce with galls, caused by Chermes abietis; 6, adventitious root of Cryptomeria japonica. We know of no satisfactory method of preventing the leaves of Picea from falling when dry.—*W. H. S.* It is very difficult to name Cypresses from the leaves only. 1, Thuya orientalis var. Sieboldi; 3, probably C. Benthami; 4, perhaps C. sempervirens; 2, 3, 4, conjectural.—*Rev.* The garden varieties and hybrids of Begonia Rex are very numerous, and some of the forms very similar to others of their section. Yours seem to be: 1, Louise Closson; 2, smaragdina; 3, Evansiana maculata; 4, Mrs. Anna Low; 5, Count Alfred de Limminge; 6, Marshalli.—*Felix.* 1, Odontoglossum odoratum; 2, Odontoglossum Lindleyanum; 3, Odontoglossum Hunnewellianum; 4, Oncidium varicosum; 5, Epidendrum selligerum; 6, Tainia barbata.—*J. S.* 1, Pteris serrulata cristata; 2, Lomaria gibba; 3, Polypodium crassifolium; 4, Selaginella Martensii; 5, Selaginella denticulata; 6, Asplenium Trichomanes.—*G. O. S.* 1, Abies Nordmanniana probably; 2, Picea nigra; 3, Picea excelsa, Common Spruce.—*C. H. T.* Sternbergia lutea (the yellow Crocus); Cestrum aurantiacum (the climber); Melaleuca hypericifolia. Why not number the specimens?

PEACH AND NECTARINE TREES: *W. B.* One of two things must be done, either prune back the shoots to a wood-bud, or, better still, allow them to produce fruits, as you are of the opinion they are capable of doing this. The bearing of fruit would serve as a check to excessively strong growth. If the wood is well ripened, cut the shoots back two thirds of their length, and take two shoots up from the base of each that has been pruned. Next season the old shoots may be cut out altogether. You could hardly have expected the trees to fruit last season, seeing they were planted as late as April, when most fruit trees are in flower.

RAIN: *F. G. B.* An inch of rain weighs about 101 tons per acre. The weight would be practically the same in all parts of the country, and under different conditions of the atmosphere.

SEEDS SCREENED FROM BARLEY: *J. G. G.* The seeds are those of Darnel grass *Lolium temulentum* Linnæus. The seeds have injurious effects on chickens which, having eaten them, appear as if intoxicated. Larger animals, horses especially, have frequently shown signs of injury after eating fodder containing a quantity of these seeds. The symptoms noticed were inflammation of the stomach and intestines, diarrhœa and a dry cough. It is not advisable to use the screenings mentioned in your note as food for cattle, similar injuries having been noticed in these animals also.

SWEET PEAS: *A. H.* The making of a Row from "pale pink" to "deep red" is comparatively easy, but the gradation from lavender to blue is abrupt in the Row evolving from "Mauve" to "deep violet." From pale pink to deep red: Duchess of Sutherland, Eliza Eckford, Countess Spencer, Mrs. Gladstone, Lovely, Princess Beatrice, Janet Scott, Phyllis Unwin, Coccinea, Firefly, Prince Edward of York, Scarlet Gem, Queen Alexandra, George Gordon, and King Edward VII. From mauve to deep violet: Lady Nina Balfour, Mrs. Walter Wright, Dorothy Tennant, Lady Grisel Hamilton, Golden Gate, Countess of Radnor, David R. Williamson, Countess Cadogan, Emily Eckford, Captain of the Blues, Indigo King, True Blue, Miss H. C. Philbrick, Navy Blue, and Romolo Prazzani.

VIOLETS DISEASED: *L. W.* The plants are badly affected with the Violet disease, Ascochyta violæ, a pest that is spreading through almost every garden in which Violets are grown. You should burn your diseased stock and plant some other crop, for the disease is sure to attack any plants of Violets that may be grown in the same soil. See *Gardeners' Chronicle*, November 5, 1904, p. 328.

WIREWORM: *W. C.* Give the land a heavy dressing with the gas lime, 8 ounces to the square yard, after which allow it to remain fallow for some weeks, or a season, when the strength of the chemical will have greatly abated. If weeds were uninjured by the former application, the quantity you used was insufficient. Use the material when fresh, as old gas-lime is a comparatively mild substance.

COMMUNICATIONS RECEIVED.—A. P.—Rex. W. C. W.—J. & A. McB.—J. P.—E. B.—C. B. G.—H. L.—E. L. B.—A. C. B.—H. W. W.—V. C.—F. G. B., next week—A. Brown—W. K., too late—W. L., we regret being unable to refer to the matter again—G. P., the report is out-of-date—A. E. S., the matter has ceased to be of sufficient interest—A. N.—H. W.—A. P.—W. H. S.—A. C.—D. Bros—C. J. D.—A. Scot—A. C. B.—F. S.—J. C.—A. T.—W. F.—H. M.—H. B.—A. C. B.—F. T. L.—A. C. W.—L. L.—C. E. P.—L. W.

NEW WINTER-FLOWERING CARNATIONS: 1, ROBERT CRAIG; 2, WHITE PERFECTION; 3, MRS. ROBERT NORMAN; 4, ST. LOUIS. (SEE TEXT.)

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE

Gardeners' Chronicle

No. 1,042.—SATURDAY, December 15, 1906.

CONTENTS.

ILLUSTRATIONS.

THE KINGDOM OF YVETOT.

[SEE SUPPLEMENTARY ILLUSTRATION.]

"Il était un roi d'Yvetot
Peu connu dans l'histoire."

IN the very centre of a crescent-shaped range of densely-wooded, chalk hills in Normandy, washed at the base by the waters of the Seine, lies the town of Caudebec. The ornate spire of the church, delightful to the eye of the tourist and specially interesting to the architect, is placed in the exact centre of the curve formed by the recession of the hills. The extreme points of the crescent may be some 20 miles apart, and the whole of this area is occupied by forests of deciduous trees, Beeches, Oaks (Quercus sessiliflora chiefly), Limes, with conifers at rare intervals. The river at this point is some half a mile or more across, forming a bold sweep, bounded by the chalk cliffs before mentioned. We shall not attempt to paint the scene in words, but we have surely said enough to show that here are all the elements of a fine landscape.

Not far off is Yvetot, the capital of that king little known to history, but owing his now world-wide fame to Béranger's account of his sayings and doings. It seems that there really was a *roi d'Yvetot*. A judicial murder was committed, and the only way in which the king could make reparation was to confer royal privileges on some relative of the murdered man. So runs the story. True or not, the modern Yvetot is an important railway station, and those who want to get away from Caudebec, which has but a scanty train service, often find it desirable to drive past the cider orchards to avail themselves of the better opportunities offered by Yvetot.

Horticulture is at a low ebb here, what flowers there are to be seen in the gardens being of a very ordinary character; but the visitor, as he stands at the end of the tree-lined quay at Caudebec, can hardly fail to be attracted by a noble Lime tree in a private garden abutting on the towing path. The leaves are covered on the under surface with silvery pubescence, so that the variety may possibly be one of the American forms. We have no data by which to estimate the size of this monster. Its colossal branches are supported and tied together by stout chains, often more or less deeply embedded by the overgrowth of the wood. Further along are two very tall and shapely Wellingtonias (Sequoia gigantea). The native flora is identical with that of our own chalk hills, whilst the banks of the river and adjoining marshes are clothed with practically the same vegetation as that which adorns the banks of our own Thames. Indeed, the bend of the river near Caudebec forcibly recalls the Cliveden reaches, but on a much larger and bolder scale.

Here and there the chalk is overlain with a sandy or loamy deposit, on which the Common Broom, the Heather (Calluna), and other sand-loving plants flourish; whilst the deposits of leaf-mould favour the growth of Scolopendrium, Polypody, Bracken, and other ferns.

On the slopes of the hills, wherever a clearance has been made, are Apple orchards, furnishing material for the cider, which is the drink of the country. The trees are small and of no great age, grown above grass, as in most of the older Kentish orchards. The crop, as far as we could judge, was this year by no means abundant, and we were told that, owing to the hot, dry summer, the Apples were small and deficient in juice. The gathering of the Apples was just beginning, and, as may be judged by our illustration, the methods of gathering and collecting are primitive and wasteful, little or no care being bestowed on the Apples, which are knocked about as if the fruit were not the precious commodity they really are. The orchards, though numerous, are individually of small extent. The "*clos au masure*"—a word not to be found in the ordinary dictionary—denotes a small orchard cultivated by the peasant proprietor, whose little cottage is on the "estate."

When the fruit is ready for gathering, auction sales are held on the ground, the purchaser buying the fruit on the trees and conveying it to the presses, which are shown in our illustration. Tubs and presses were, at the time of our visit, being furbished up for use, and some of the little village streets were redolent of Apples and of cider.

Those who do not feel disposed to quit Paris will find in the Louvre, No. 643, an excellent representation of a wooded hill in Normandy, with the *clos masure* bedecked with Apple trees in full bloom, and only the ends of whose branches are, as it were, covered with boxing gloves, the appearance being due to the grafting clay with which the stumps of the branches are covered. The painter is Millet, which is as much as to say that the picture is full of truth and charm.

A French phrase-book which has often afforded us some amusement bids the traveller in Normandy to ask the innkeeper, "*Avez vous du bon cidre, monsieur?*" Accordingly we took the opportunity to put the question, and the answer came back as if straight from the phrase-book itself, "*Oui, monsieur, j'ai du très bon cidre.*"

In this country it will not do always to confide in the phrase-book, for the natives speak a language which, if once French, is so no longer. Perhaps it may have closer relationship with the Norman French, still made use of in our law courts. Be this as it may, this is the original country of the Harcourts, the Traceys, and many other noble families whose ancestors "came over with the Conqueror," and whose names are still current in Normandy.

OUR FUTURE TIMBER SUPPLIES.

PRESIDENT ROOSEVELT, at the first Forestry Congress held at Washington about a year ago, said: "If the present rate of forest destruction is allowed to continue with nothing to offset it, a timber famine in the future is inevitable." Never were more truthful words uttered, and if this is the case with the United States it may be well to consider what is our own position as by far the largest importers of timber—larger, indeed, than all the rest of Europe put together. When we consider, therefore, that the total area of woodlands in this country is only a little over 3,000,000 acres, that fully 15,000,000 acres of waste lands exist, and that we annually import over 10,000,000 tons of timber at a cost of nearly £30,000,000, the necessity for an increased area of woodlands will be apparent to all, and the more so as a dearth of timber is imminent and outside supplies are being rigidly conserved, while our home demands are ever on the increase.

Taken as a whole, Europe has not enough timber to meet her demands, about 4,000,000 tons in excess of what she produces being annually required, and stringent laws have been passed regulating the output. This is the case with Norway, Sweden, Finland, and Russia. The Canadian forests and those of the United States are both nearly exhausted, and by a competent judge it has been said that in 15 years little or no timber will be left if depletion goes on in those countries as at present. But the worst is that there are no forests to fall back upon, for the timber of those of Africa and India and South America is unsuited generally to our wants. Australia, China, and Japan require at present more timber than they produce.

Quoting again from President Roosevelt's speech, he said: "Remember that you can prevent such a famine occurring by wise action taken in time: but once the famine occurs there is no possible way of hurrying the growth of the trees necessary to relieve it." For the past five-and-twenty years I have not failed to urge on the State and private owners of woodlands the pressing necessity of planting up some at least of the waste and unprofitable lands of our country, in order to provide timber for the future, and leave us less dependent on the gradually dwindling supplies that are annually sent us from abroad. England being, so to speak, a residential country, the retention of a certain amount of heath, mountain, and commons land for the purpose of deer forests, grouse moors, game coverts, and golfing links is imperative, and will considerably reduce the

amount of land available for afforestry purposes. But I think that I am well within bounds in allotting out of the 15,000,000 acres of waste lands 1,000,000 acres to afforesting, and 14,000,000 to game preserves and recreations. Having personally explored much of the mountain and heath lands in England and Scotland, and some of the vast tracts of bog land in Ireland (which alone extend to fully 14 million acres), I have carefully computed that of the land up to 1,200 feet where timber would grow perfectly well, about 9,000,000 acres are available for afforesting purposes. As far as I have been able to find out, the average rental of such ground would be considerably under 3s. per acre, while, on the other hand, I am quite convinced that any land which does not bring in at least three times that amount for grazing or agricultural purposes would be more profitably employed in carrying a crop of timber. It is, perhaps, unfortunate that much of these waste lands is private property, the owners of which, even could they afford it, have little inclination to sink, for a period of, say, 25 years, the necessary capital required to be expended on the formation of woods and plantations.

Under such conditions the question naturally arises, What is the most feasible way to overcome the difficulty? In answer, and without the slightest hesitation, I would say that the State should acquire and plant suitable waste lands at the rate of 40,000 acres annually, for a period of 25 years. Such lands could, in England, Scotland, Wales, and Ireland, be gradually and cheaply acquired by the State with a change of proprietors, and in Ireland vast tracts of bog land would be willingly handed over to the Government at the present moment at a small sum per acre. Quite recently, in Wales, 7,412 acres of upland described as "rough grazing and sheep walk," was sold by public auction for £15,070, or at the low rate of £2 2s. 3d. per acre. The land was particularly suitable for the growth of larch, as the highly-remunerative plantations adjoining clearly pointed out. But numerous similar cases could be given, so that the excuse of no available land is not tenable. Personally I have little faith in the State advancing money to landed proprietors towards afforesting, or in municipalities coming to the front as planters of woodlands. The State, and the State only, can readily acquire the needed land in sufficient quantity and on the best terms, and I am fully convinced that plantations formed under this supervision will, in an economic sense, at least, be far ahead of those planted either by private persons or public bodies.

After careful computation, I have no hesitation in saying that the area of plantations in the United Kingdom could at once be doubled by the planting of waste lands which at present do not bring in over 2s. per acre of rent annually, with infinite benefit to the country generally and a vast increase in the value of land, both to the owner and farmer who cultivates it. I have already suggested that altogether 1,000,000 acres should be planted over a period of 25 years at the rate of 40,000 acres per year, which would be an outlay of about £2,000,000 annually—a small sum, it will be admitted, when compared with the £225,000,000 yearly expended by this country on supplies brought from abroad. In a future paper the cost of planting and financial returns therefrom will be dealt with. *A. D. Webster.*

FRUIT WALLS AT WROTHAM PARK GARDENS.

IT does a professional gardener good to visit a garden which, in the hands of a prudent, caretaking gardener, has made continuous progress in the matter of fruit-culture, inside and outside. In vegetable-growing, and in general up-keep, such a garden is Wrotham, near Barnet. From a variety of circumstances this garden, famous about the middle of last century, when under Mr. Thomson, author of the *Gardeners' Assistant* (a book which few cultivators would like to be without), degenerated slowly but certainly to a rather dilapidated condition. The present head gardener, Mr. Markham, formerly of Mereworth, near Maidstone, well supported in his efforts for the rejuvenation and improvement of the old place by his employers, Viscount and Viscountess Enfield, has been enabled to alter greatly for the better some of the more striking features, of which I may here mention the fine well-built fruit-walls, the vineries, espalier fruit fences, the walks and Box edgings, and mixed herbaceous borders in the combined fruit and kitchen gardens. Much has been accomplished during the last seven years, but I would in this note allude to the fruit trees on the walls, and what has been, and is being, done to make them as complete as is possible. The chief area is a kitchen garden of three acres, enclosed with walls ranging from 18 to 20 feet in height on the north side, on which are the far-famed vineries, a Peach house and an unheated Fig house, and south, east and west walls of lesser height. The last three are furnished with fruit trees on both sides, and one of the so-called "slips" on the outside of these three aspects is likewise enclosed with walls on two sides, or rather on the longer side and the short northern end. The total length of both sides of east and west walls, covered with trees, is about 1,200 yards. The head gardener began six years ago to purchase small trained trees of Peaches, Nectarines, Plums, Cherries, and Pears, with which to furnish the many blank spaces, and to take the place of worn-out, ill-shapen trees of these kinds, and those first planted have now quite filled their allotted sites between the pilasters or shallow buttresses on the west and south aspects. And numerous young trees bought in succeeding years as untrained maidens will in a year or two be sufficiently large to be removed to permanent situations. This is a proceeding that should never be neglected in gardens having great lengths of fruit-walling or several Peach-houses to be kept filled with trees of fruiting age.

When fruit walls become furnished with trees in good bearing, the outlay for maiden trees annually is of no great amount, and young healthy ones are always available for taking the places of those which, for one reason or another, have to be grubbed up. Mr. Markham is a good fruit cultivator, more especially of Peaches and Nectarines, Plums, Cherries, Apples, Pears and Grapes, and his wall trees are most correctly pruned and trained, the wood laid in rather thinly, and the branches, from those at the bottom of the tree, trained horizontally, at 2 feet from the ground level, when the tree is of full size to others touching the top courses of the wall and the pilasters on either side. Almost every one of the trees of stone fruit is trained fanwise, with no erect branch or stem in the middle, even the oldest trees, victims of much pruning and loss of branches from gumming, being made to conform to the general system. The foliage was still quite perfect and of a bright green colour, but putting this aside the colour of the young wood was indicative of certain ripening, and of great promise for 1907.

On a west wall there were observed full-grown trees of Peaches, Princess of Wales, one of the best mid-summer varieties, of a creamy colour, rosy pink on the exposed side; Bellegarde, Violette Hative, Crimson Galande, Condor, a handsome variety coming into use in August and September and possessing a bright crimson cheek and piquant flavour; Noblesse, an old favourite, but disliked by many growers because the fruits will ill bear careless handling; and Early Alfred, a fine freestone variety with rich and pleasant flavour—a seedling from Hunt's Tawny Nectarine. A very fine tree of the Dryden Nectarine found a place on this wall.

The long south wall was covered chiefly with the following Peaches, viz: Stirling Castle, Violette Hative, Hale's Early, Dymond, Sea Eagle, a large September variety of fair flavour and rich colour, Early York, and Marquis of Downshire (syn. Waterloo?). A tree of the Pineapple Nectarine is growing on this wall.

On the west wall were noted fine healthy trees of the following varieties of Plums: Transparent Gage, Golden Drop, Green Gage, Golden Gage, and Rivers' Orange; on an east aspect Wyedale and others, besides Sweet Cherries and some Pears. Numerous espalier fences are covered with young fruiting trees of choice Pears and Apples, and the northern aspect of the south wall is furnished with many Morello Cherry trees, Plum Golden Drop, with many sound, delicious shrivelled fruits thereon at the date of my visit (October 29). The fruit crops of all kinds were exceedingly heavy this year at Wrotham, and in size and colour they were above the average. To secure, as far as possible, another season of abundance, every tree not showing extra vigour, or which had carried a big crop of fruit, received 40 gallons of manure water, and a thick top dressing of decayed manure, for a space equal to the spread of its branches—a much required proceeding, seeing that the rainfall was exceedingly scanty during summer and early autumn. *F. M.*

SINGLE CHRYSANTHEMUMS.

WHATEVER may be our opinion as to the present estimate of the large flowered Japanese Chrysanthemums, there is no doubt but that the single-flowered varieties are now appreciated generally in a greater degree than formerly. They are free in flowering, bright in colour, and may be used for decoration either as pot plants or cut flowers.

The two varieties shown in our illustration at fig. 151 were remarked in a recent exhibit of Messrs. H. Cannell & Sons, at the Royal Horticultural Society's Hall, and we are indebted to this firm for material from which Mr. Worthington Smith's drawings have been made.

The variety Innovation has perfectly formed circular flowers of winy-red colour or mahogany-red, with clear, yellow disc. Its habit is described as dwarf.

Miss Till is of a pretty shade of mauve, and as will be seen from the illustration, the florets remain convolute, whilst the flowers are of much larger size than those of Innovation. Both varieties may be recommended.

FOREIGN CORRESPONDENCE.

THE GARDENS OF MANILA.

To one who has noted the many charming, well-kept villa-gardens that dot the suburbs of Honolulu, of Buitenzorg, in Java, of Singapore, Colombo, and Calcutta, the bald nakedness of Manila is especially distasteful, and is a standing reproach to the foreign resident, as well as to the American who, after eight years, might have found time to make some concessions to the æsthetic side of life. The ill-kempt, squalid yards which are dignified by the name of garden, would be an uncongenial topic were it not for some rare or charming subject that has found and retained a foothold despite siege, earthquake, and continuous neglect.

The physical conditions in and about Manila

are not of the best for high-class tropical gardening. The soil is decidedly poor, the natural drainage bad, and, above all, a five-month continuous drought has to be reckoned with. Soil-amending material is scarce and costly, but, on the contrary, hydrant water is ample and reasonably cheap.

ORCHIDS.

Here we are in a country that teems with Orchids, and yet the difficulties of procuring them are so great that the writer has more than once thought of sending to some English grower for Philippine species! The explanation is simple. The collectors for European houses gather and pack their cases at the nearest convenient port to where the Orchids are found, and, if they come to Manila at all, it is merely for the clearance and transhipment by the first departing steamer. From the hills about Manila, Aerides and the commoner Dendrobes are brought in freely and sold cheaply, but none of the finer species of Phalaenopsis occur nearer than 50 miles, and as they can only be sold when in flower, and as, of course, the blooms get badly damaged in long overland transit in crowded hampers, the native collector finds the cheaper Orchid the most profitable to handle.

The charming Phalaenopsis Luddemanniana, from the mountains of Benguet Province, could once be purchased of the Igorot Indians for about 4d. They now ask 2 pesos (4s.), and it costs another 4s. to get it down to the coast. Phalaenopsis Schilleriana sometimes comes in here in quantity from Tayabas, but is quickly lost from boring insects that attack the [illegible], or it succumbs to our winter atmosphere, which is less humid than that of Tayabas. From distant Mindanao, superb specimens of Vanda Sanderiana, V. Batemanii, or V. coerulea sometimes reach this market. They require radically different handling from the Phalaenopsis, but they are all hung up together, all get their daily "tub" regardless of the resting season, and after one year are generally total wrecks.

The [illegible] and summer typhoon works havoc with both Orchids and [illegible]. One of unusual severity on September 26, 1905, annihilated the few small private collections in this city, and practically wrecked [illegible] plantations worthy to be dignified by the name of garden. One in the direct [illegible] centre of the tornado escaped any serious injury, and affords ocular demonstration that proper [illegible] will protect any garden from such visitations.

The owner, an enthusiastic cultivator, had his garden completely obliterated during the last serious typhoon, which had occurred just 24 years previously. He at once set about renovation work, and, as a preliminary, planted a double line of the giant Bamboo along his [illegible] boundaries. Within these he planted [illegible] of such sturdy and resistant trees as [illegible] [illegible] Tamarindus indica. Within all lay his garden. The last typhoon whipped and lashed the Bamboos till they were as bare as a [illegible] poles stripped of [illegible]. The Tamarinds suffered too, but in lesser degree, and the garden proper was uninjured. Some hundred or more specimen Rex Begonia plants had their delicate, easily-lacerated leaves intact. [illegible] superba showed hardly a rent in its foliage, and his delicate Adiantums received no perceptible check. Meantime all about him howled a 90 mile per hour gale, and for the brief space of

FIG. 151.—SINGLE CHRYSANTHEMUMS MISS TILL AND INNOVATION. (For text see page 402.)

10 minutes a velocity of 103 miles per hour [illegible].

Such preventive me[illegible] [illegible] applied to city gar[illegible]. The B[illegible] [illegible] [illegible] [illegible]

[illegible]

committing myself to their belief in its like baleful influence upon human beings. In the case instanced, at least, nothing of value can be grown within 30 feet of the trunks, so that in this garden there is a total zone of nearly 70 feet that is quite lost to cultivation. But the Tamarind has its consolations. We have no more suitable wood in the Archipelago upon which to establish all species of Phalænopsis, but now (as if confirming the above-mentioned superstition) upon a live limb of this tree we find it difficult to establish any other epiphytal plant.

At this moment has just passed out of flower Dolichandrone Rheedei. I do not recall its cultivation in European conservatories, but have ascertained that by judicious pruning it may be flowered as a shrub, and its rather sparing flowering habit be improved. Among an order (Bignoniaceæ) noted for its fine representatives it has few rivals, the daintily fringed corolla limb of its immense snowy-white trumpets being as striking as they are beautiful. It occurs in waste places about Manila, and, like the prophet within his own country, is without honour in so far as garden representation goes. *Wm. S. Lyon.*

NEW OR NOTEWORTHY PLANTS.

DENDROBIUM BRANDTIÆ, KRANZLIN, SP. N.*

The plant, of which I have only seen a spike, certainly resembles Dendrobium Phalænopsis, bigibbum, dicuphum and other Dendrobia from Northern Australia or New Guinea. The most striking characteristic, however, is that the petals, and especially the sepals, are more or less twisted or even curled, and the plant connects the Dendrobes of the Phalænopsis-group with those having an affinity with D. undulatum, the crests of the lip being elegantly fringed and jagged. The plant shows also an affinity with D. Sumneri, and at first I was not sure that we had not to deal with this plant, described from an imperfect specimen by F. v. Muller (see *Flora Austral*, VI., 278), and not very well-represented in European collections. D. Sumneri, however, is evidently a much smaller plant, not to mention that it has other botanical characteristics. This new species, though not so brilliant as the better varieties of D. Phalænopsis, is very beautiful and merits further attention and cultivation. The flowers, which I received indirectly from Madame Ida Brandt, of Zurich, are rather firm and of a more fleshy texture than those of other species, and approach by this characteristic also to the flowers of the Undulatum group of Dendrobium. The colour is a mauve purple; the crests of the lip are silvery. I regret that I could not get more accurate information about the plant, but being new, and a true member of a familiar group, and well known as to its geographical area and botanical peculiarities, I do not hesitate to publish the plant. *F. Kränzlin.*

* DENDROBIUM BRANDTIÆ, *Kranzlin.*—Planta habitu et inflorescentia D. Phalænopsidis sed minor. Racemi elongati laxiflori. Flores ad 12 plus minus secundi, pedicelli cum ovario curvatis ad 3 cm. longi albidi. Sepalum dorsale oblongum acutum reflexum, sepala lateralia falcata recurva oblonga acuta mentum simplex serratum obtusum breve formantia; petala quarta longiora et duplo latiora obovata brevi-acutata reflexa, haec omnia margine plus minus undulata, labellum e basi cuneata trilobum, lobi laterales late obovati antice denticulati verosuli, lobus intermedius oblongus acutus margine valde undulatus, callus longitudinalis bisulcatus e basi medium usque duplue divisum in lamellas 3 (quarum intermedia longior) supra eleganter papillosas fimbriatasve. Gynostemium pro flore longiusculum, stelidia satis magna, uncata reflexa, filamentum longum subulatum. Sepala petalaque pulchre violaceo-purpurea pallidius marginata, mentum et basis sepalorum extus albida, labelli basis et lobi laterales albidi purpureo effusi, lobus intermedius intensius coloratus fere ut petala, sepalum dorsale 2.3 cm. longum, 8.9 mm. latum, lateralia 2.5 cm. longa 9 mm. lata, mentum 1cm. longum, petala 3 cm.-3.2 cm. longa antice 1.5-1.6 cm. lata, labellum 2 cm. longum et inter lobos laterales 1.5 cm. latum, lobus intermedius 6,7 7 mm. longus 5 mm. latus.—*F. Kränzlin Berlin.*

ORCHID NOTES AND GLEANINGS.

A MODEL ORCHID HOUSE.

THE new Odontoglossum house, built for J. Gurney Fowler, Esq., Glebelands, South Woodford (gardener, Mr. J. Davis), by Mr. A. Harris, horticultural builder, Ealing, and now filled with a grand collection of Odontoglossums, seems to be a model structure, for it embodies the best features of modern structures as well as some new ideas of Mr. J. Gurney Fowler himself. The house is span-roofed, 70 feet long and 20 feet wide, all the woodwork having the bars grooved to carry off drip, and the glass cut on the curve with the same object. On the outside an iron frame carries the blinds used for shading over a foot above the glass, and with a view to keeping the atmosphere as cool as may be in hot weather a perforated water-pipe runs from end to end along the ridge. By this means water can be run over the glass. On the inside, on the top of the brickwork, a similar perforated pipe runs to moisten the wall. Both these pipes have water-companies' supplies in order to save the rain water, which is stored in three very large tanks beneath the centre stage. In order to prevent the hard water from running into the rain-water tanks, a separate outlet is provided in the gutters, and the rain-water downfall is blocked during the use of the other supply, which is regulated by taps.

The staging is carried well up and is made of teakwood, with spaces between the bars, the central stage being in four tiers.

The heating is by 4-inch hot-water pipes, which are arranged so as to avoid too direct radiation to the plants, and, to further assist in this direction and to preserve a moist atmosphere, an almost closely arranged lower staging of ironwork, bearing flat red tiles, is fitted above the pipes and beneath the teak-wood staging on which the plants are grown. Temporary brickwork screens, much used at Glebelands to equalise moisture and heat, are also placed where considered desirable.

All the houses have been thoroughly overhauled, and with the new Odontoglossum house the Orchids are now better provided for than ever.

VARIATION IN ODONTOGLOSSUM CRISPUM.

THE chief impression left upon the reader of the article which appeared in the issue for June 2 by those who know the habitat of Odontoglossum crispum is that if the instructions therein given were to be literally followed out the buyer would have to leave the finer varieties and purchase the poorer ones.

To begin with, the writer mentions that varieties of O. crispum have been much more numerous of late years than during the period 1890 to 1900, and explains this abundance of O. Hunnewellianum and O. triumphans, which misrepresent the species bearing flowers with brown and yellowish spot, by stating them to be the equivalents of O. luteo-purpureum and O. gloriosum from the Pacho district.

This opinion is too erroneous to be passed over in silence. O. luteo-purpureum is strictly limited to the Cordillera of the Suma Paz, or to the south (Fusagasugá), while O. Hunnewellianum and O. Adrianæ come from the Velez region.

Every grower of experience would refuse collections of O. crispum in which luteo-purpureum is seen, as its presence would be an indisputable proof that the crispums will be pure Alexandræ, the form with small, starry-like flowers from the Fusagasugá region.

We are quite aware that large consignments of the bad Fusagasugá type have been sent to Europe as being the finer type from the Velez region. The explanation is very simple. The Fusagasuga plants are found abundantly over the whole district, and can be obtained cheaply. They are charming in appearance, and are admired for their vigour, their long, conical bulbs, and flattened at the neck. These plants are transported to Pacho and to Chiquinquira, and sold to ignorant collectors at a good price. The trick is highly successful; native dealers are usually unscrupulous, and find they have thus an easy source of income, and the satisfaction of deceiving the stranger who relies only on their word.

About three years ago I myself saw about 20 case of Fusagasugá crispum on the way to Chiquinquira. The fact of these inferior types being mixed with a large proportion of the good type from the Velez region explains the

FIG. 152. PHŒNIX CANARIENSIS IN SICILY.

large proportion of star-shaped flowers found in collections of crispum. I repeat that any lot of crispum, even if it contained only one luteo-purpureum, should be refused on suspicion, as the number of poor types will predominate if they are not found to the exclusion of all others. There is no luteo-purpureum in the Velez region.

Before proceeding it is as well to enquire about the "districts" mentioned by Mr. de Barry Crawshay. Readers of his article derive the impression that O. crispum is found in numerous "districts" more or less distant from each other, and each providing a different type, and which could be successively exhausted by collectors and explorers. He mentions specially certain districts as having yielded good types, whilst others—that of Velez in particular—have produced but inferior ones.

I do not know where the writer learnt this fact, which appears to me entirely imaginary. The principal districts that he mentions are San Cayetano, Pacho, La Vega, Chiquinquira, Velez, &c. In what sense he uses the term "district" he does not say, but, as I am familiar with, and have traversed these regions, I would state:—1. That in all the localities mentioned except Chiquinquira the Sugar-cane thrives, thus indicating a very different climate to that required by O. crispum. 2. That there has never yet been seen one crispum in either of these localities. These "districts" are but small towns or villages, where, according to their wont, collectors apply for the special commodity which they are seeking. Plants are brought to them, which they have but to count over and purchase. This is done by Indians, who range the mountains, upon which the collectors themselves never set foot. These travellers then, finding the "posadas" more or less comfortable, the price of the plants more or less high, material for their packing-cases more or less easily procurable, and sometimes governed by their own wishes only, move about, and settle successively at Pacho, La Vega, &c. The favourite localities now are Velez, Bolivar, and Jesus-Maria, new "districts" but not more new than others, as a glance at a map shows that they are all adjacent to a small part of the Cordillera, whence the true crispums have always been procured. In this part of the Cordillera, and not north, south, east, or west of it, crispum is found. The centre of the region of crispum is, to be exact, "Sucre Viejo," formerly called La Granja by the natives. This is a hamlet of from 12 to 15 huts at an altitude of about 2,500m., and for years it has been the starting point for explorations in search of crispum. Therefore, the one and only "district" (to use Mr. de Barry Crawshay's expression) is that which I have called "Sucre Viejo," and it is no more logical to speak of the Velez than of the Pacho, or Vega "district."

Why does not the writer mention the districts of Zipaquira, Bogota, Tacatativa, and Aqua Larga—localities whence for some years collectors have quietly waited for the plants brought from Sucre Viejo and the neighbourhood? These localities have an equal right to be called the crispum districts.

Even now, as was the case 20 years and more ago, the fine type of crispum is never obtained, except from the Sucre Viejo region. Only those who are not personally familiar with the country can affirm the contrary, and they can give no material proofs to support their statements.

FIG. 153.—COLLECTING LEAVES OF EUROPEAN DWARF PALM (CHAMÆROPS HUMILIS) IN SICILY. Photo from Mr. Sprenger.

I will now consider the various types of crispum found in the regions of Fusagasuga and Sucre Viejo, which I have called Velez.

The only home of the true O. crispum is towards the south of the region, where the search for crispum began. The allied species to O. crispum are then Lindleyanum, triumphans, gloriosum, Andersonianum, Coradinei, and Ruckerianum. It was then natural that these should not be found varieties with beautiful blood-red and brown-red spots indicative of hybridisation. Then, gradually, exploration was pushed northward, and some good varieties began to appear. At that time Pacho was the meeting-place of the collectors: the Indians or natives came there to sell these varieties, and often to Bogota itself. These intermediaries were careful to conceal from the collector the exact habitat of the plant. Hence the origin of the fine types "from Pacho," &c. Collectors, thus mistaken, declare, in all good faith, that a certain variety is from Pacho or elsewhere. But if they went over those mountains they would at once perceive that the plants all came from one relatively small district around Sucre Viejo. This is the only region yielding, of late years, those fine varieties which hybridists now so much affect. Last year only we witnessed the purchase of many admirable varieties by a collector for one of the largest trade-growers in England. These varieties came, it may safely be affirmed, from the mountains named Pena Bonita, Pelycadero, La Granja (Sucre Viego), Campo hermoso, &c., a large tract that has belonged since 1898 to the Adornado Rubber Co., Ltd. The mean temperature of these mountains is as follows:—

TEMPERATURES. Night.	Day, shade.	ALTITUDE.
0° (32° F.) to 12° (54° F.);	3,000 metres,	very cold zone.
+ 5° (41° F.) to 15° (60° F.);	2,800 ,,	cold zone
+ 8° (47° F.) to 18° (78° F.);	2,400 ,,	,,
+10° (50° F.) to 20° (69° F.);	2,000 ,,	cold temperate.

These temperatures are persistent throughout the year. It is towards an altitude of 2,400 to 2,500 metres that the finest varieties are usually found. The climate is fairly mild, and insects are numerous. Of late years crispum has been sent from the mountains of the cold and very cold zones, where there are no insects. This accounts for a scarcity of varieties and a scarcity of fecundated flowers. Last year, on the contrary, a somewhat large number of fertilised flowers was found among the plants from the cold-temperate mountains, of a considerable number being of the finer varieties.

At an altitude of about 2,200 metres O. Adrianæ and O. Hunnewellianum are found. Can it then be assumed that these pretty varieties result from the reciprocal crossing of crispum and Adrianæ? Without affirming that such is the case, I see nothing improbable in it, as these are the only two species that preserve the perfectly round shape of the fine crispum and the pretty brownish-red spots so esteemed by hybridists.

The hybrid of O. Hunnewellianum, triumphans gloriosum alters the rounded form of crispum, and produces only the star-like, inelegant forms, and those having yellowish spots.

The zone now under exploration furnishes the best types of crispum, but many specimens of roseum are found, and no one knowing the district can deny this fact. It is then the Velez region (Sucre Viejo being the central point) which has yielded, and will yield, perhaps, for a long time the best type of O. crispum. I beg M. de Barry Crawshay to believe that I do not in the least impugn his good faith, but it is necessary, nevertheless, to explain the true state of the case. *Velez, September 20, 1906.* A. *Poirier, The Adornado Rubber Co., Ltd., 15, Rue du Conservatoire, Paris.*

PALMS IN THE MEDITERRANEAN REGION.

ONE of the commonest Palms of the Riviera is Phœnix canariensis. That it finds a congenial home also in Sicily is shown by our illustration, for which we are indebted to Mr. Sprenger, of Naples. The contrast between its spreading pinnate fronds and the dark pyramidal cypresses is very marked.

There is but one Palm that is nowadays indigenous to any part of Europe, and that is Chamærops humilis, which is found here and there on the Riviera, and especially in Sicily, where the fronds, as shown in our illustration, for which we are also indebted to Mr. Sprenger, are collected for various purposes, such as the manufacture of hats, fans, baskets, roofing materials, and similar purposes, whilst the fibre extracted from the leaves is used for rope-making.

PLANT PORTRAITS.

ROSE HIAWATHA. *Garden*, November 24.—Mme. Georges Bruant (rugosa) and Carmen (rugosa).—*Rosenzeitung*, November, 1906.

CHRYSANTHEMUM MDME. TH. CHARVET.—Japanese section, flowers creamy-white, raised by Calvat.—*Revue de l'Horticulture Belge*, December.

COLONIAL NOTES.

VARIOUS BULLETINS AND REPORTS.

THE progress that has been made in recent years in the establishing of botanical gardens or stations in many of our Colonial possessions, particularly in the West Indian Islands and on the West Coast of Africa is more especially marked by the increasing number and regular appearance of the reports and bulletins that now form part of the system under which those gardens or stations are administered. Time was when an annual report of a botanic garden was little more than a mere record of the number of plants received and distributed, together with a few notes on alterations in the plant-beds and walks; but the more general adoption of monthly or quarterly bulletins, instead of an annual report, has changed all this. Besides, the greater attention that has been given to the economic or commercial side of plant culture, and the interchange of the useful plants of one country for those of another, by which the number of their products have been increased, and the constancy of their supplies ensured, has done much in adding to the usefulness of these bulletins. Further, the arrangements adopted for diffusing these publications and the cheap rate at which they are sold—many, indeed, being distributed free of charge—have been the means of putting them into the hands of planters and commercial men generally, so that the needs of one country become known in another, and the needs of the world are known throughout the world.

All this marks a distinct advance in the interest taken in the economic side of botanical science, and promises important results that must accrue to the commerce not only of our vast oversea possessions but also to the mother country, as well as to the world at large. It is a result that has been long looked for. The subject has been brought more prominently to our mind by the receipt of a batch of reports and bulletins from the Imperial Department of Agriculture for the West Indies, the Government of the Gold Coast, the Straits Settlements, and others, a few notes from each of which will emphasise the truth of our statement.

West Indian cultures are, as is well known, carefully looked after by the Imperial Commissioner and a qualified staff, having its headquarters at Barbados, and from which is issued quarterly the *West Indian Bulletin*, and fortnightly the *Agricultural News*, besides numerous publications in pamphlet form. These are all valuable in giving original and extracted articles and notes on every branch of work connected with the department; but, besides these, we have the usual annual reports of the curators of the botanic stations at all the smaller islands; these, however, are more of the nature of financial statements, with details on the general condition of the gardens and some interesting notes on economic plants thrown in, which, if collected into one pamphlet, would be more come-at-able and consequently more useful.

Of the *Jamaica Bulletin*, which is issued monthly and is edited by the Director of the Department of Public Gardens and Plantations, the Hon. William Fawcett, the matter is carefully selected and is mostly of a very useful nature; and the same may be said of the *Bulletin of Miscellaneous Information*, issued quarterly from the Botanical Department of Trinidad, and edited by the Superintendent, Mr. J. H. Hart. Going further afield, we have the *Agricultural Bulletin of the Straits and Federated Malay States*, under the joint editorship of Mr. H. N. Ridley and Mr. J. B. Carruthers, which contains a great variety of notes and articles, both of scientific and commercial interest, and we may perhaps refer to one in particular, namely, that on "Malay Drugs," from the pen of Mr. Ridley, in the June number. As may be supposed, rubber comes in largely for consideration in all these publications, and this is particularly the case in Mr. W. H. Johnson's report on the Botanical and Agricultural Department of the Gold Coast for 1905. Referring to the number of seeds distributed during the year, Mr. Johnson states that it was the largest on record, and was accounted for by the increased interest in rubber cultivation. It is satisfactory to learn that though the seeds of *Hevea brasiliensis*, *Funtumia elastica*, Manihot Glaziovii, and Castilloa elastica have all been distributed, a considerable amount of attention seems to have been given to the first-named species, which is the source of the Para rubber, the most valuable of all; they are reported to have made more satisfactory growth than the African trees, and to be the most promising crop.

NEW VARIETY OF COCOA.

The following paragraph is also of much interest as indicating a new and improved source of commercial cocoa: "The plants of the new species of cocoa, i.e., Theobroma pentagona, continue to make good progress. The beans of these plants are larger and finer than those of the Forastero type; comparatively few plants have, however, been propagated, as the majority of the seeds have been stolen. Unsuccessful attempts have been made to bud the new species on the Forastero stock, but better results are anticipated from inarching the two plants." Referring to this, in his review of the report to the Earl of Elgin, Major Bryan, the officer administering the Government of the Gold Coast, makes the following remarks: "The fact that the majority of the seeds of the new variety of cocoa (Theobroma pentagona), introduced by the director, were stolen from the gardens, shows how quickly the natives appreciated the difference between the finer bean of this plant and that of the ordinary cocoa (Theobroma cacao). It is desirable, however, that they should express their intelligent interest in the experiments undertaken in the gardens in a less inconvenient manner."

From the Imperial Department of Agriculture for the West Indies the following reports have come to hand: — *Botanic Station, Experiment Plots and Agricultural Education, Antigua.*—The drought seriously interfered with many cultural experiments. Mr. T. JACKSON became Curator of the Botanic Station last August. In the Grammar School both boys and girls now receive instruction in agriculture and botany.

In *St. Kitts-Nevis* Mr. F. R. SHEPHERD is Curator and Agricultural Superintendent, and Mr. H. HOLDER is foreman. They report useful work performed during the past year, but drought was a considerable hindrance. At the *Experiment Station, Tortola Virgin Islands*, economic plants are largely distributed and much appreciated, and efforts are being made to encourage the cultivation of Cotton by the peasantry. Mr. FISHLOCK is to be congratulated on good work carried on under great difficulties.

Mr. MILLEN, Curator of the *Botanic Station, Tobago*, reports satisfactorily upon the plant distribution work of the year. This has necessitated enlarging the nurseries. Various improvements have been made. We note that there is now communication between Tobago and Trinidad by means of wireless telegraphy.

Mr. BUTTENSHAW, Scientific Assistant *Department of Agriculture, St. Lucia*, forwards the reports of the Superintendent on the Botanic Station and Agricultural School to March, 1906. The general condition of the Station was satisfactory, and much useful work was done in the educational departments. Mr. HUDSON'S services in Cacao and Rubber cultivation proved of great value.

Throughout these bulletins and reports there is generally a notable improvement in the omission of unnecessary formalisms in quoting official correspondence, by which much space is saved, as well as time in seeking for the substance of the matter dealt with.

The Week's Work.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Pinapples.—Towards the latter end of the present month a house should be prepared for forcing a batch of "Queens," if ripe fruits will be required in June. Get the plunging material in readiness, remembering that new tree-leaves or tan will yield a steady and lasting bottom heat. When the heat of the bed has fallen to 90° the pots containing the plants may safely be plunged in the bed at 2 feet apart each way. If the heat is excessive the pots should only be plunged to half their depth, completing the process when the heat has declined. The atmospheric temperature should at first be maintained at about 65° at night, with a rise of 5° during the day by artificial means, admitting a little air when the heat rises to 80° by sun warmth. Keep the soil moist by affording waterings of tepid, weak guano-water, and maintain the atmosphere moderately moist by damping the floors twice each day. Syringe between the plants early in the afternoon on fine days.

Plants bearing fruits should now be kept in an atmospheric temperature of 65° to 68° at night, but in very cold weather a heat of 5° less will suffice. The pits should be covered at night with mats, which will greatly economise the fire heat. The atmospheric temperature may be allowed to rise 10° in the day, keeping the bottom heat at about 85°. Carefully examine each plant every two or three days and afford the roots water when they have become dry.

Successional Plants.—During the next six weeks hard firing should be avoided, relying more on covering the glass with mats at night. Plants of the Smooth Cayenne and Charlotte Rothschild type should not be hurried, but at the same time they should not be retarded by being kept in too cool conditions. The supply of water must be very carefully regulated.

The Cherry House.—To obtain good flavoured Cherries, these indispensable fruits should be grown indoors, either in pots or planted out in borders. Where the latter method is adopted, there will doubtless be some shoots that are not required for extension or for filling blank spaces. These should now be cut back. If almost daily attention was given to stopping and pinching the shoots during the growing season, there will be very little need to use the knife much at the present time, and as the Cherry-tree is so subject to "gumming" this is advantageous. The terminal shoots on pyramids or fan-tailed trees will not require shortening unless the extreme extension has been reached in each case. Wash the trees with Gishurst compound dissolved in warm water, and ventilate the house very freely night and day, until the trees are to be started into growth.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq. Cleveley, Allerton, Liverpool.

Begonia Gloire de Lorraine is an indispensable plant for decorative purposes in winter, and from observations made in reference to propagation I prefer plants which have been grown from leaves, or from seed. At Cleveley we have now in flower some 250 plants grown in pots and shallow pans: the latter are used for suspending from the roof of the corridor. The stock was raised by leaf propagation, from cuttings, and from seed, the latter germinating on the surface of the pans, which last year were suspended in the corridor, thus showing clearly that B. Gloire de Lorraine will reproduce itself from seed, providing the atmospheric surroundings are suitable.

Plants raised from seeds are best.—There can be no question as to the superior quality of the bloom produced by the seedlings, apart from their more vigorous habit of growth, which has been most noticeable throughout the whole period of development. Next to the seedlings, those plants raised from leaves have a more vigorous constitution, and produce finer flowers than the plants grown from basal cuttings.

Propagation by means of leaves.—If propagation by leaves should be the method to be adopted, no time should be lost before making a selection of fully-matured leaves taken from clean, healthy plants. The leafstalk should be about 1½ inch long, and such leafstalks, with leaf attached, should be placed singly into small 60-size pots, rather than pans, because this Begonia is impatient of root disturbance in a young state. The leaves should not be pressed close on the soil, otherwise they will damp off before roots are formed; neither should they be subjected to a confined atmosphere. Once the leafstalk has made roots and become established, the leaf will commence to decay, and eventually the young growth will appear.

Propagation by cuttings.—Growers who favour propagation by means of cuttings should choose those growths that arise at the base in prefer-

ence to side or stem growths; the latter invariably continue to produce flowers. The old plants, after flowering, will need to be shortened, but not too close, and, if placed in a little extra warmth, will soon furnish such basal growths as I have recommended. Much of the success in growing Begonia Gloire de Lorraine is due to maintaining an evenly-balanced atmosphere in the house, which, from the commencement of the flowering period, has been kept at a temperature of 60° and uniformly moist.

General work.—Schizanthus from seeds which were sown early in the autumn may now be pricked off into 6-inch pots, placing to the number of five or eight plants in a pot, and using rather a light soil. Keep the plants in frames or pits, and mat these up as a protection from frosts. These structures will be found better suited to the requirements of the plants than heated pits. Continue to repot Cinerarias and herbaceous Calceolarias before they get pot-bound, and apply artificial heat only when frost is imminent. Clivias should be kept in an intermediate degree of heat at this season, and rather dry at the roots until the flower sheaths appear.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH St. Fagan's Castle, Glamorganshire.

Wistaria.—Any notes on hardy shrubs and climbers for walls would be incomplete which did not include Wistaria sinensis. For decorating the south front of a house, especially in the south of England, it is unrivalled. There is a white variety which grows as vigorously as the type, but is decidedly less pleasing, and also a Japanese species, W. multijuga, which has pale purple racemes of greater length than W. sinensis. To encourage quick growth in the first instance good loam or manure should be supplied when planting, and plenty of moisture at the roots during the growing season is indispensable. The Wistaria requires plenty of space to ramble over, and a sunny aspect.

Solanum jasminoides is suitable for planting against a warm wall, whether of house or garden. Its light, starry flowers, borne in trusses, give a delightful effect in autumn and early winter. Its cultivation is simple. Cuttings will make roots easily and if propagated in October or even at the present time, and treated liberally in pots until planted out in the summer, the plants will flower the first year.

Buddleia Colvilei.—This shrub is somewhat tender, and probably would not succeed in the open except in favoured localities, but planted against a sunny wall it should do almost anywhere. It is one of the prettiest of our flowering shrubs. The flowers, which appear in July and August, are in pendulous panicles 1 to 1½ feet long, and rose-coloured. Its one drawback as a wall plant is its vigorous growth. B. variabilis, having smaller and lilac-coloured flowers and of hardy constitution, is also a desirable wall plant. Both are superior to the more familiar plant B. Lindleyana.

Muhlenbeckia complexa is desirable for growing on a trellis against a wall. It is simply a foliage plant, as the flowers are inconspicuous, but its graceful, free-growing, evergreen trailers are beautiful. It reminds one strongly of an Adiantum Fern. The plant grows freely and rapidly, soon covering a wall 20 feet high.

Ceanothus.—Few shrubs are more useful for wall plants than these, because of their foliage. The colour and profusion of their bloom are very effective. C. dentatus is particularly fine, as its deep blue flowers, appearing first in May, continue almost until autumn. C. Veitchiana and its varieties, too, are splendid.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Early Potatos in frames.—Where Potatos are cultivated in frames a start must now be made, if this has not already been done. The first consideration is to procure good "seed" tubers, and, to save time, place the tubers in a warm house to induce them to start into growth before they are planted. Thin out the sprouts to two to each tuber. These growths may be allowed to grow to 2 inches in length before planting is done, and, if then planted in moderate heat afforded by a hotbed, a few days only will elapse before they are seen through the soil. Care must be taken that hotbeds have been made long enough to allow the first violent heat to subside, otherwise the prospects of a good crop may be quite ruined. There is no need to plant the tubers in a great depth of soil to begin with, but rather add to it when the young growths require earthing-up. Too much soil at first has a tendency to stifle the heat arising from the manure underneath.

Potatos in pots.—Pots may be used for the early crop, if desired, but the returns from these are never so profitable as when the plants are well cultivated in a frame. Now that many Peach houses and vineries will be closed and warmed, it is a good time to start pot-culture. There is an abundance of light in such houses, and the pots can be moved to later houses when necessary. An early crop by this means can easily be secured by Easter. Any attempt to secure earlier crops seldom results in obtaining tubers of good eating quality, which, after all, should be the first consideration.

Early Peas.—This crop must be grown slowly from the beginning, and those who contemplate sowing Peas under glass with a view to planting them out later may safely sow at the present time. It is better to begin early and grow the plants in cool conditions than later, and have to hasten them by too much fire-heat. Boxes or 4-inch pots may be used, and, as a rule, we prefer to use pots, as the plants can be transplanted from these without receiving any check. The Pea, however, transplants very readily, and either method of raising them is satisfactory. When sown in boxes the seeds should be planted 1½ inches apart each way, so that the plants will not become closely entangled with each other before planting time. An atmospheric temperature of 45° to 50° is sufficient, and when the seedlings are well through the soil the pots may be removed to a cold frame. They must not be coddled, as the stems would thereby be weakened. Soil shaken from pot Chrysanthemums, if put through an inch-meshed sieve, will form first-rate material for this early sowing.

THE HARDY FRUIT GARDEN.

By W. A. COOK, Gardener to Sir LIONEL G. LOPES, Bart., Chamberlayne, Sussex.

Filberts and Cobnuts should now be pruned. Standard trees may have some of the inner branches cut away. Close, short-jointed wood fruit best, therefore, cut out the strongest growths. Keep the heads shapely, and the ground about the roots free from weeds. Fork over the surface, and apply a mulching of rotten soil from the potting shed or hotbeds. A little lime may also be added. Specimens grown as bushes will require more pruning. Some of the older growths should be taken out, in order to make room for younger ones, but only as many new growths as there is ample room for should be retained. Do not allow Moss, Lichen, or Ivy to grow near the stems. Fork over the surface soil, and mulch it as recommended for standards. Some of the best sorts are Filbert Early Prolific, Red-skinned Filbert, Kentish Filbert, Kentish Cob, Pearson's Prolific, Merveille de Bolwyller (a very large nut, with a thick shell), Louis Berger (a free bearer, and produces very large bunches), and Cosford Cob (a very thin-shelled nut).

Walnuts.—On many old estates these are old trees, which generally get plenty of pruning by the annual thrashing they receive. But a few young trees should be planted on all old and new estates to succeed the old trees when they become worn out. It is the gardener's duty to see that this is done, and, if fair-sized trees that have been properly planted and staked, are now of moderate size, they are not much trouble. The branches may be trimmed off up to about 7 feet in height to allow cattle to walk under them if growing in a park or on meadow land. The variety known in France as Mayette-Charbette produces very large nuts. Juglans fertilis is of dwarfer habit, the shells thinner, and the fruits ripen 10 days earlier. These trees are satisfactory as isolated specimens, or planted in groups of three or five specimens at distances of not less than 12 to 15 yards apart. When planted in groups they are better able to resist the wind, as single specimens are liable to get battered about in the S.W. gales.

Fig trees growing in cold districts should now be unfastened from the wall and have their branches tied together, so that the embryo Figs may be checked from developing. In severe weather, the branches should have some old mats, bracken, Heather, or some other protective material tied around them. In the south this will not be necessary; in the western counties I did not find this system an advantage, and even in the north it is not necessary except in very severe weather. In order to cultivate Figs successfully they need a restricted root area, and should any root-pruning be decided upon it may be done at any time now when the weather permits. Plenty of old mortar rubble should be placed about the roots when the soil is disturbed. The best variety for outdoor culture is Brown Turkey. Negro Largo, a very fine-flavoured variety, succeeds well in some places on a very warm wall. Brunswick is another desirable kind for culture out-of-doors, and White Ischia also does well, but the fruits are small. White Marseilles bears rich and large fruits, but the tree is a shy bearer out-of-doors until it is of considerable age. The Fig should be planted in the poorest of soils, but, at the same time, it should have efficient drainage, for the soil will soon become sour about the roots of Figs in badly-drained land. A sandy soil, in which are incorporated plenty of brickbats, is one of the best rooting mediums. Figs require nourishment in the form of liquid manure when growing.

THE ORCHID HOUSES.

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

Miltonia vexillaria.—Plants which are now in full growth will require to be examined occasionally, as sometimes, when growing fast, the tender leaves clasp each other so firmly as to check the younger ones and crinkle them. When this is observed gently separate the leaves by passing the thin bone end of a budding-knife between them. It will also be noticed that at the base of some of the new growths there is a short, brown-coloured, outer sheath, which frequently clasps the growth so tightly as to prevent the young roots from entering the compost. Remove this sheath by carefully slitting it in several places, and pulling it off in small pieces. The amount of water supplied to the roots should be gradually increased. During the winter months I discontinue damping between the pots, in order that the potting material may dry quickly after being watered; if kept in a saturated condition for long together the leaves suffer at their points, and become spotted. This same condition may be caused by the atmosphere of the house falling below its average degree of heat, especially if it is too damp at the same time. Such fluctuations are the more likely to occur if the plants are grown in too much heat during the winter months; an atmospheric temperature ranging between 50° and 60° will suit them admirably.

Other Miltonias.—M. Endresii, M. Bleuana, and its several varieties, also the rare M. Schroderiana, of which some plants have been recently imported, succeed well in the same conditions. M. phalænopsis prefers the drier atmosphere of the Mexican house.

Odontoglossums.—After cleaning the glass and woodwork of the Odontoglossum house, and during the rearrangement of the inmates, each plant should be carefully attended to as advised for the Miltonias, and where rare and valuable varieties of O. crispum, &c., are producing their young, succulent flower spikes, a rough piece of wadding should be wrapped around them, over which slugs will seldom pass. Carefully guard against allowing any unhealthy or shrivelled plant to produce its flower spike, or the plant may be irretrievably ruined.

Oncidium Cavanium.—Plants that are pushing forth roots from the new growths should be protected from the ravages of slugs, &c.

Masdevallia tovarensis.—In the same house with Miltonia vexillaria this well-known Masdevallia is now producing numerous pure white flowers, which appear well above the green foliage. Do not keep the plant very wet at the roots.

EDITORIAL NOTICE.

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

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

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

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DECEMBER 15—German Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—40.0°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, December* 12 (6 P.M.): Max. 48°, Min. 38°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, December* 13 (10 A.M.): Bar., 29·5, Temp., 42°, Weather—Overcast.

PROVINCES.—*Wednesday, December* 12 (6 P.M.): Mon 41° S.W. Ireland and Cornwall, Min. 37° Cambridge.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, Roses, Plants, &c., at Stevens' Rooms, 38, King Street, Covent Garden, W.C., at 12.30.

WEDNESDAY—
Dutch Bulbs, Perennials and Border Plants, at 11; 5,000 Roses, at 1.30 and 4; Azaleas, Rhododendrons, Palms, &c., at 4; 1,265 cases Japanese Lilliums received direct, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—
Hardy Border Plants, Perennials, Roses, Azaleas, Orchids in variety, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

The National Rose Society.

The meetings of the National Rose Society are conducted in the most business-like manner, and the annual meeting held on the 6th inst. was no exception to the rule. We do not wish to make any comparative statement, but we may certainly say that the meetings of the Rose Society are not only managed in a careful, business-like way, but they are somehow permeated by a sense of refinement and geniality, as if the members had unconsciously imbibed something of the spirit of the Rose itself—of the Rose without its thorn, be it understood. We are all of us Roses as well as men—more or less influenced by circumstances, by the action of the environment, as the phrase now runs, and, this being so, it is no wonder that the Rose should shed some of its charms upon its devotees. The Rose Society includes among its members a large proportion of really earnest amateurs who put their hearts into the work to a degree not commonly witnessed in similar societies, except among the professional members. Some societies seem to be established and to exist mainly for the benefit of their commercial members. The amateurs take relatively but a small part in the work of the society either as exhibitors or as members of the executive. This is not, and never has been, the case with the Rose Society. Moreover, the society has been specially fortunate in its administrative officers. One of the principal objects of the late meeting was to induct the new president, Mr. Lindsell, in the place of Mr. Shea. By a somewhat self-denying ordinance of the society, Mr. Shea, after a presidency of two years, had to resign his post to other hands. Of course, there are excellent reasons why the presidency of a society should not in all cases be occupied too long by the same person, but the definition of the period connoted by the words "too long" might surely be made more elastic and less automatic than it now is. Be that as it may, we are quite sure that those who were glad to welcome Mr. Lindsell would have been well pleased if the fates had not ordained that Mr. Shea should relinquish his office at the allotted time.

In some societies the presidency is more or less nominal. Some distinguished member is elected on general grounds, and if his tenure of office is short, it affords the better opportunity for the appointment of some other person who would also confer honour on the society. But where the president is a hard worker and a shrewd man of business, full of tact and ability, then it seems a pity that the rules should not be relaxed so as to permit a longer period of office.

To revert to the proceedings. The society is flourishing. It numbers more than 2,000 members, and there are no fewer than 40 local societies affiliated with it. Its income is satisfactory. Its reserve fund, though not large, is increasing, as it should do, in order that the treasurer may not be disturbed by the occurrence of a rainy day. The report and balance-sheet, as presented, were submitted for adoption by the president, seconded by Mr. Prince, and carried without comment. An amendment to Rule 2, to the effect that a commutation fee of £15 15s., or of £10 10s., might be accepted in lieu of an annual subscription of £1 1s. or of 10s. 6d. respectively, was proposed by the Rev. F. Page Roberts, seconded by Mr. Frank Cant, and carried without any adverse criticism. The Rev. H. B. Biren, in a speech full of geniality and pleasant reminiscence, submitted that the members of the committee and the officers were entitled to the best thanks of the members, a proposition seconded by Mr. John Green, and, of course, agreed to by acclamation, renewed when Mr. Mawley got up to respond.

A similar well-merited compliment was paid to the chairman, who then, as we have already mentioned, inducted as his successor Mr. Lindsell, the hero of a hundred fights—best evidence that he will carry out his promise and of his ability to carry out the duties of the office in the most satisfactory manner.

Among the principal features of the report, to which we have not already adverted, were the allusions to the three exhibitions held by the society during the year. At the Regent's Park no fewer than 8,000 "exhibition" Roses were shown, in addition to the so-called garden and decorative Roses, so that the show in the beautiful grounds of the Botanic was altogether a great success. The Edinburgh Show suffered in consequence of the drought, as did the September Show at the R.H.S.

Allusion was also made to the Hole memorial medal, the subscription list to which is now closed, and to the D'Ombrain memorial, which still stands in need of further assistance. The next metropolitan exhibition will be held in the Regent's Park on July 4, and the provincial exhibition at Saltaire on July 16.

The autumn exhibition will be held at the R.H.S., Vincent Square, on September 24. Mention was also made of the publications of the society, whose usefulness is much appreciated. Referring to the obituary record, Mr. Shea mentioned that as the death rate among the members was only 7 in the 1,000, instead of the usual 15 or 16, rosarians desirous of prolonging their years should join the society, and that the attention of the several insurance societies should be called to the fact!

A dinner in the evening formed a very appropriate termination to a satisfactory meeting.

*** **OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle* Almanac for the year 1907. *In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents, will send us* IMMEDIATE INTIMATION *of all fixtures for the coming year.*

LINNEAN SOCIETY OF LONDON.—At the evening meeting, on Thursday, December 20, 1906, at 8 p.m., the following papers will be read:—1, Dr. A. B. RENDLE, M.A., F.L.S., and others, "Botanical Results of the Third Tanganyika Expedition, 1904-5"; 2, Mr. F. CHAPMAN, A.L.S., "Fossil Foraminifera of Victoria."—"The Balcombian Deposits of Port Phillip." Exhibitions: Albino Woodlice, by Mr. WILFRED MARK WEBB, F.L.S.

ROYAL BOTANIC SOCIETY.—The Rev. Canon BARKER, Chairman of the Reform Committee, has given notice that at the Fellows' meeting to be held on Friday, the 14th inst., at 4.15 (after the publication of this journal for the week), he will ask "if the Council still maintain that the only means of keeping the Society alive is to increase the Fellows' subscription, and if so (as this proposal has on a vote been twice rejected by the Fellows), by what means they now propose to keep the Society alive; also whether they still contend that the appointment of a competent Superintendent is unnecessary and inexpedient."

PROF. PFITZER. We greatly regret to have to record the death of this gentleman, the well-known professor of botany, at Heidelberg, and the author of various treatises on the morphology and classification of Orchids. Prof. PFITZER took part in the Hybridisation Conference last summer. He died of heart affection on the 3rd inst.

MR. E. H. WILSON left Liverpool on the 5th inst. for his third visit to China. He goes out this time under the auspices of Prof. SARGENT, of the Arnold Arboretum, Boston. We can only wish him an equally successful journey and a safe return.

VACANCY ON STAFF OF IMPERIAL DEPARTMENT OF AGRICULTURE, WEST INDIES.—The post of Scientific Assistant on the Staff of the Imperial Department of Agriculture in the West Indies will probably be vacant by the promotion of Mr. W. H. BUTTENSHAW, M.A., B.Sc., to an appointment under the Government of India. The salary is £350 per annum. A highly qualified scientific man, with good experiences in editing and bringing out publications, is desired.

THE ROYAL GARDENERS' ORPHAN FUND.—So few flower-show committees do anything to help either of the gardeners' charities, it is quite refreshing to learn that the Bradford Chrysanthemum Society, by means of a flower stall at their recent exhibition, have again been able to send £6 to the Royal Gardeners' Orphan Fund, a fact which is very satisfactory, as we understand that, owing to bad weather, the show was not so well attended as usual.

SUCCULENT EUPHORBIAS.—M. BERGER, of La Mortola, has recently published through M. EUGEN ULMER, of Stuttgart, an illustrated monograph of the succulent species of Euphorbia, to which we shall allude at greater length later on.

BOTANICAL MAGAZINE.—The December number is the concluding portion of the volume for the year, which is dedicated to Mr. RIDLEY, the director of the Botanic Garden, Singapore, who, with untiring generosity, has surpassed all recent contributors in enriching the Kew collections with rare and novel plants. The plants illustrated are:—

ÆCHMEA GIGAS (*E. Morren*), tab. 8,107.—A very handsome Bromeliad, with tufted, broad, finely-toothed leaves, large crimson bracts finely toothed at the edges, and encircling a dense tuft of greenish flowers.

PONTEDERIA CORDATA (*Linn*), VAR. LANCIFOLIA (*Morong*).—Only differs from the type in its lanceolate leaves.

VANDA WATSONI (*Rolfe*), tab. 8,109, and in *Gardeners' Chronicle*, 1905, i., pp. 82, 123, fig. 52.—Native of Annam. Flowers white; leaves subterete.

COREOPSIS GRANTII (*Oliver*), tab. 8,110; *Watson* in *Gardeners' Chronicle*, 1906, i., p. 162, fig. 64.—Native of E. trop. Africa; leaves bipinnatifid, flower heads yellow surrounded by an involucre of short oblong bracts. A good plant for the decoration of the cool greenhouse in the winter months.

RHODODENDRON FORDII (*Hemsley*), tab. 8,111.—A very pretty Southern Chinese species with shortly stalked ob lanceolate leaves, covered in the young state with fulvous down and bearing trusses of campanulate flowers, the corollas of which are white flushed with rose, the upper petal spotted at the base. It has not proved hardy at Kew.

LEGISLATION FOR NURSERYMEN.—We understand that in accordance with an arrangement made during the debate in the House of Lords last week on the Land Tenure Bill, LORD BALFOUR OF BURLEIGH has had an interview this week with Sir THOMAS ELLIOTT, the legal adviser to the Board of Agriculture, Mr. HARRY J. VEITCH and Mr. MORGAN VEITCH, solicitor, being present to watch the interests of the nursery trade from the practical and from the legal points of view respectively. The proceedings were private, but we understand that the gentlemen named came away satisfied with the result of their visit. So long as the legal position of nurserymen is put right without unreasonable delay, it is, of course, immaterial to them in what Act of Parliament the necessary section amending the law is inserted. We hope to be in a position to throw further light on the subject during the course of the present month.

AMERICAN GOOSEBERRY-MILDEW.—The Board of Agriculture and Fisheries have received information that the American Gooseberry-mildew (Sphærotheca mors-uvæ) has been discovered in more than one place in England, and as there is reason to believe that the disease, in at least one case, is of some years standing, they think it desirable to warn all fruit-growers, nurserymen, gardeners, and other growers of Gooseberries of the dangers involved. The disease, which is termed American owing to the extensive damage it has done in America, is of a very serious character, and has rendered the culture of Gooseberries unprofitable and practically impossible wherever it has appeared. The mildew generally becomes visible during the last half of May or the first half of June, when it appears in the form of "glistening frost like spots" on the fruit on the lower part of the bush where there is usually dense shade. It then spreads to the leaves and tender shoots. In its earlier stages it has a cobwebby appearance, which soon becomes white and powdery from the development of the light conidial spores. Later in the season the leaves and other parts affected turn a rusty brown. The fungus prevents the berry from growing, and the fruit becomes worthless. All during the summer therefore the disease can easily be detected, and the bushes can be dealt with according to the extent of the disease. But during the winter the disease remains dormant and will not spread from plant to plant. During this period, however, it can be conveyed from one district to another in bushes and stocks. It is clear that enormous and irreparable mischief may be done in this way, and it is the duty of all nurserymen to take precautions not only for their own sake, but for the sake of the locality in which they live. The Board of Agriculture and Fisheries therefore urge all nurserymen and market-gardeners who intend to buy bushes or stocks of Ribes aureum, whether from abroad or from Ireland or even from other growers in Great Britain, to observe the following precautions. 1, Only to purchase from those growers or dealers who are prepared to offer a guarantee that the plants they are selling are of their own growing, and that no case of American Gooseberry-mildew has ever appeared in their gardens or in the immediate neighbourhood, and that the said plants have not been near any Gooseberry-plants recently brought on to the seller's premises; 2, to plant such Gooseberry bushes or stocks as they may buy or acquire from premises other than their own in a special part of their nursery or garden at some distance from other Gooseberry bushes; 3, to destroy all plants found to be infected with the mildew and to spray with Bordeaux mixture all others suspected of being infested, with the object of destroying any external mycelium or adhering spores that may be present. This should be carried out during the period when the disease is dormant; 4, to keep a careful watch on all Gooseberry plants in the forthcoming spring for any signs of mildew, and to report any appearance suggestive of the disease to the Secretary of the Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W., immediately it is detected; 5, to assist the Board in discovering any unreported cases of the infestation during the past summer. There is, at present, no law dealing with the eradication of the pests of fruit trees in this country, but the Board believe that the American Gooseberry-mildew has not spread very far as yet and that it depends very largely on the action of the fruit-growers, nurserymen, and market-gardeners whether its further development can be prevented. *Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W., December 6, 1906.*

IRISH GARDENING.—A popular gardening periodical, published monthly at 2d., commences its second volume forthwith. It was good at the beginning and its progress has been so satisfactory that there seems every prospect of a successful future. The articles are of excellent quality, and the illustrations appropriate. We are very sorry to read a complaint made by an exhibitor, regarding the theft of some prize Apples at the Dublin show, which were subsequently found in a winning class at Belfast. This is a particularly contemptible practice, and, if the charge can be substantiated, the name of the guilty person should be made public in every horticultural show of the country.

ARBOR DAY AT EYNSFORD.—Saturday, December 8, was Eynsford's Arbor Day, and the happy proceedings passed off most successfully in spite of the unkind elements—a drizzling rain and a very sharp wind. Tree-planting was proceeded with throughout the day in the centre of the village, and about 200 fine, healthy saplings and shrubs, supplied by Messrs. CANNELL & SONS, were planted. As in previous years, lady students from the Horticultural College at Swanley were largely responsible for the tree-planting operations. The word "Love" was spelt out by the following trees:—Laurustinus, Oak, Viburnum, Elm! The trees planted throughout the day consisted of Elms, Oaks, Poplars, Yews, Laurels, Bamboos, Junipers and Veronicas.

THE LATE ARCHDUKE OTTO OF AUSTRIA.—By the death of his Imperial and Royal Highness Archduke Otto, which occurred on November 1 this year, the Horticultural Society of Vienna lost a zealous supporter and influential patron and liberal donor of valuable prizes of Honour to be competed for at its various exhibitions. His Highness was likewise an exhibitor of very fine collections of fruit from his gardens at Schonau.

THE BLANCARD FUND.—Mr. HARMAN PAYNE announces further donations to this fund on behalf of the Mesdemoiselles BLANCARD amounting to £2.

NATIONAL AURICULA AND PRIMULA SOCIETY (SOUTHERN SECTION).—The annual general meeting of this society will be held in the room of the Horticultural Club, Hotel Windsor, Westminster, on Saturday, December 22, at 2.30 p.m.

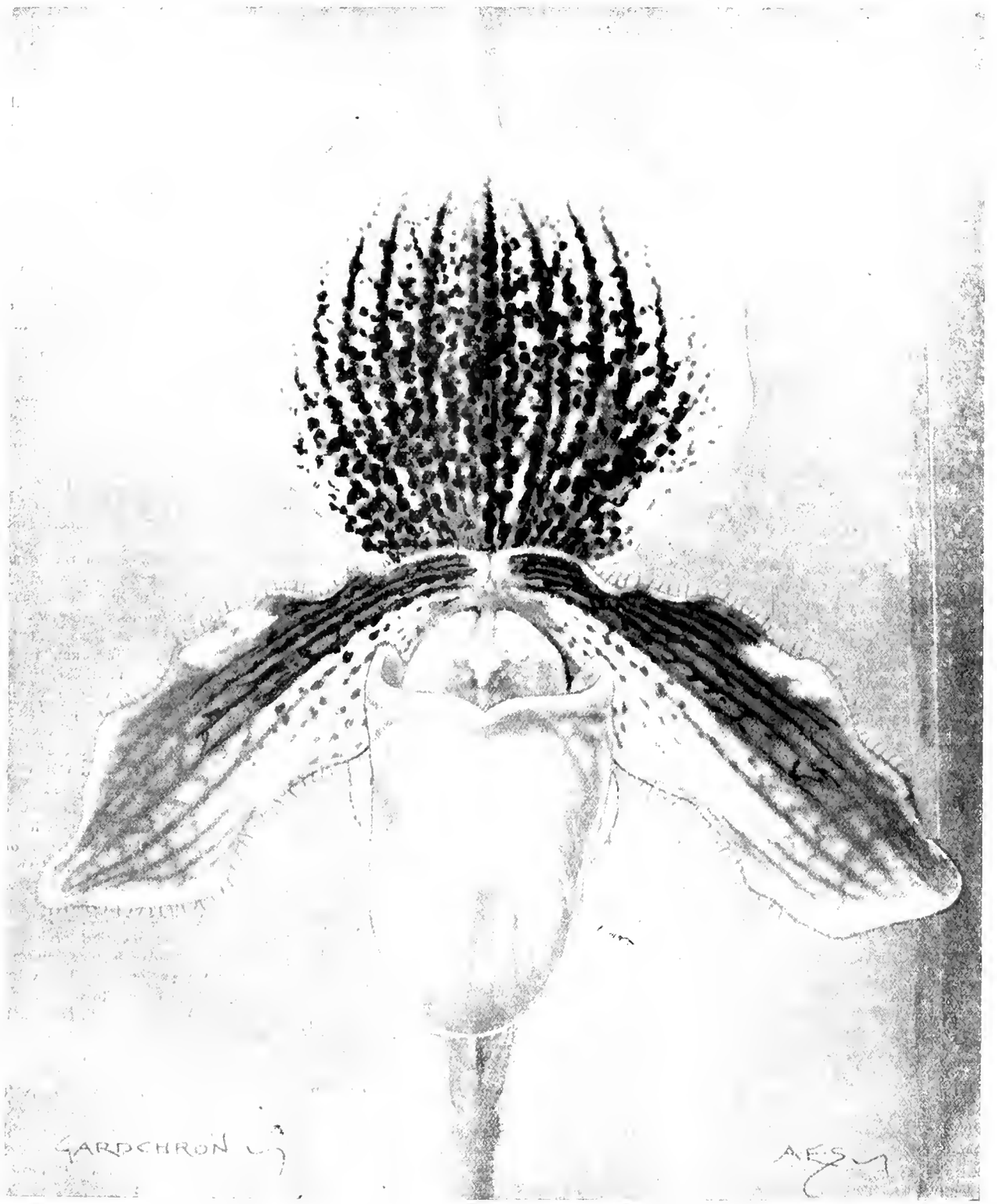
BEECH COPPICE. With reference to a note in our last issue relating to this subject, in which the writer speaks of the Beech as practically unknown in Britain as coppice, we are informed that on one estate Beech has been cut in rotation for coppice for a century and probably much more. In the article at p. 372, the exact words of the author of the volume were not given. Basing the statement on personal knowledge, one of the authors of the book writes as follows: "Therefore in cases where the Beech has been planted merely as a nurse to Oak or other trees, and there is no deciduous tree better adapted to this purpose, I should not hesitate to cut over the trees if they seemed likely to smother their neighbours, with the expectation of getting a quantity of excellent firewood, or small poles fit for turning, fifteen or twenty years later."

WHO'S WHO? 1907.—Messrs. A. & C. BLACK have issued this most serviceable book. It is one of those books which are indispensable on an editor's table and scarcely less valuable to the general reader. Owing to the changes caused by the General Election which could not be inserted in the last edition, this volume is particularly useful. *Who's Who Year Book, 1907*, is a supplement to the preceding, containing various tables and lists crowded out of the larger volume. The editor asks for suggestions, so that we venture to suggest that a useful addition would consist in the publication of the correct titles to be given to suffragan, assistant, Indian, Colonial, and Missionary Bishops respectively.

NAPLES SEED LISTS.—We are accustomed to hear of short supplies of seeds owing to unpropitious seasons, but it is not so common to hear of a deficiency from volcanic action. The heavy and prolonged rain of ashes which fell in April last during the outbreak of Mount Vesuvius destroyed many crops around the volcano, and supplies of vegetable and flower seeds will in consequence be deficient, as may be readily understood from the illustrations lately given in our columns.

PRESENTATIONS TO GARDENERS.—At the meeting of the Doncaster Gardeners' Society, held on Thursday, December 6, Mr. HENRY BUTCHER, who is leaving the district, was presented with a marble timepiece as a token of the members' esteem and in recognition of his past work for the society.——At a recent meeting of the Loughborough and District Gardeners' Mutual Improvement Association, Mr. D. ROBERTS, of Prestwold Hall gardens, was presented with a solid silver salver (inscribed), a purse of gold, and a framed illuminated address in recognition of ten years' service as honorary secretary to the association.

THE SMITHFIELD CLUB SHOW. The fat cattle show in the Royal Agricultural Hall, Islington, which has been open during the present week, may be said to be remarkable for the success which has been gained by the KING'S Shorthorn beast and his Majesty's Southdown sheep. But gardeners, scarcely less than farmers, were interested in the exhibits of seeds and roots, displayed by the seedsmen in the gallery, and in the exceedingly good collection of farm and garden implements that were also to be seen arranged round the sides of the building. Messrs. SUTTON & SONS, Reading, arranged, as usual, a very imposing stand, on which their specialities were disposed to excellent advantage. Mangolds, Turnips, Swedes, and choice varieties of Potatos, as well as samples of the various grains, were included in the exhibit. The two 20-guinea cups, presented this year by His Majesty the KING for the best root crops, have been won by customers of Messrs. SUTTON, and the cups were therefore on view. Messrs. J. CARTER & Co., High Holborn, exhibited an unusually fine display of Mangolds, Swedes, and Turnips, also tubers of selected varieties of Potatos, Onions, Carrots, and seeds of the usual "grains." Messrs. E. WEBB & SONS, Wordsley,



(Photo by J. Gregory.

FIG. 151.—CYPRIPEDIUM GERMAINE OPOIX, "WESTFIELD VARIETY" (NATURAL SIZE). (See p. 411.)

CYPRIPEDIUM GERMAINE OPOIX, "WESTFIELD VARIETY."

OUR illustration at fig. 154 represents this very fine Cypripedium for which Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), received a First-Class Certificate at the Royal Horticultural Society's meeting on November 6, and which further added to its honours by taking the First Diploma as a C. Fairrieanum hybrid on November 20. This beautiful hybrid was the last of a small batch raised by M. Opoix in the gardens of the Luxembourg Palace, and it proves to be the finest.

As will be seen by the illustration, which has been prepared from a natural-size photograph by Mr. Gregory, the flower is of fine proportions. In colour it is also remarkably good and distinct, the large white dorsal sepal, which is yellow at the base, being finely marked with blackish purple lines changing to rose-purple in the smaller, upper spots. The petals and lip are honey-yellow, marked with purple. It is a very beautiful hybrid, and a free grower.

THE AMERICAN GOOSEBERRY-MILDEW.

WITHIN the last few days, chiefly through the energy of the *Evesham Journal*, further outbreaks of the American Gooseberry-mildew have been discovered in the neighbourhood of Evesham. An outbreak at Pershore has also been discovered by Mr. K. G. Furley, of Wye College.

Full particulars of all of these outbreaks are not yet to hand, but the particulars which I have obtained of one case are of such interest and importance that they should be widely circulated.

A certain nurseryman received a few bushes as a sample of a lot of 6,000 bushes which were offered for sale by a grower in the neighbourhood of Evesham. This nurseryman, in the ordinary way, would have consigned these 6,000 bushes to a purchaser in Essex, but his attention having been drawn by my lecture recently given at Evesham to the necessity of closely scrutinising all Gooseberry bushes before sending them out, he was led to suspect the condition of these sample bushes; they were forwarded to me, and I reported to him that they were badly infested with the American Gooseberry-mildew. Some thousands of bushes have already been sent out from this nursery to various purchasers.

Now this case is one of extreme interest and importance for two reasons. In the first place, we see the way in which this new disease will be distributed gradually to all the fruit-growing counties unless measures are used against this plant disease similar to those employed to stop the spread of infectious diseases in animals. We must note, too, that if these bushes had been sent to Essex (I am told that the purchase has been countermanded) and the disease had broken out there next season, as it inevitably would have done, an unscientific or hasty person would have jumped to the conclusion that the disease having appeared on bushes raised in an English nursery, must be indigenous to this country, whereas we know as a matter of fact* that some firms of nurserymen in the district of Evesham have been importing foreign bushes from the Continent, and in all probability have thus unwittingly imported the disease. In the second place, this case demonstrates the absolute necessity for immediate legislative measures being obtained, permitting the Board of Agriculture to deal with this disease so that they may prohibit in the first place all further importation of Gooseberry bushes (and *Ribes aureum*), and then by official action stamp out the disease in each affected area as it is discovered. Those who enquire of the officials at the Board, as I have done, learn that the Board has at present no power whatever to control or stop the importation of any bushes, even if they were found to be covered with this mildew, and that the Board has no powers whatever beyond those of persuasion to make the owner of any infected nursery or plantation stamp out or even control the disease, or stop sending out diseased stock.

It is for these reasons that Col. Long, M.P., Mr. Laurence Hardy, M.P., and others have been endeavouring to get the Board of Agriculture to obtain these legislative powers. A Bill to deal with the matter is being pressed forward by Col. Long. But, having been told that a Private Bill such as this has no chance of being introduced this Session, I have been pointing out to the Board of Agriculture the great danger of temporizing in the face of these outbreaks in Worcestershire, and urging them to get brought in by the Government this Session—as an emergency measure—a short Amending Act to the Destructive Insects Act, 1877 (still in force) to bring this disease within its scope.

Unless promptitude such as this is shown now by the Board, it is quite clear to anyone who has watched closely the way in which this disease is spreading over Europe, that the possibility of eradicating or even controlling the disease in this country will pass away, on account of the rapid increase of affected areas.

Efforts to obtain such legislative measures were being vigorously made by Col. Long, Mr Laurence Hardy, and others, and all growers in the affected areas in Worcestershire were taking the greatest pains to deal as energetically with the disease as I had advised them to do, when Mr. Massee, on being sent down to Evesham as the Board of Agriculture's expert, at once tries to stop—or, at any rate, deliberately hinders—the work in both these directions. I publish without comment the statements sent to last Saturday's *Times* as the result of Mr. Massee's visit, and published there on his authority and a copy of the letter in reply which I sent to the Editor of *The Times* on the following Monday:—

Mr. G. Massee, of the Royal Gardens, Kew, has been at Worcester this week, by the instruction of the Board of Agriculture, and recognised American Gooseberry-mildew in a plantation near Evesham. The owner said the disease had been there 30 years and had not affected the fruit. It only affected the bushes in the low, swampy part of the plantation. Mr. Massee says that climatic conditions in Worcestershire were against the development of the disease. In Ireland the conditions favoured its growth, but the injury there had been exaggerated. The disease would not necessarily reach the fruit, and it seemed clear that the disease was indigenous to the county and not introduced, so that legislation to prevent its importation was unnecessary. There was absolutely no necessity for panic. The statement that it was impossible to grow Gooseberries in America was a mere figure of speech. He had made careful inquiries of Americans this year, and the majority knew nothing of the disease, and those who had it on their farms said it only did harm in some places. On the other hand, Mr. Salmon, Wye Agricultural College, has said that immediate legislation is necessary, as the whole Gooseberry crop is imperilled. [It should be stated that the above paragraph, which has been the round of the papers, was not contributed by Mr. Massee, as we learn from that gentleman.—ED.]

THE OUTBREAK OF THE AMERICAN GOOSEBERRY-MILDEW IN ENGLAND.

To the Editor of *The Times*.

SIR,—Last Saturday you published a series of statements made by Mr. G. Massee, of Kew, the present scientific adviser to the Board of Agriculture, on the recent outbreak in Worcestershire of an epidemic fungus disease of Gooseberries, the American Gooseberry-mildew. As Mr. Massee denies the necessity of legislative measures to control the disease (such as those which Col. Long is now endeavouring to obtain from the Government), and makes statements which, if correct, would show that I have been needlessly raising an alarm as to the danger likely to be caused by this new pest, I must ask for space to make the following statements:

Last October I discovered the American Gooseberry-mildew in a nursery in England on recently-imported standard Gooseberries. With the object of warning Gooseberry growers of this new danger, I have been giving a series of free lectures in various fruit-growing centres. I addressed meetings at Worcester, Pershore, and Evesham. In these lectures I emphasised the following points:—That this disease was one recently introduced into Europe, and, being highly infectious, should be immediately stamped out on its appearance anywhere in England; that, since its introduction, it has spread over the eastern half of Ireland, causing considerable damage to the crop, and re-appearing annually in the affected gardens; that immediate legislation was necessary to prohibit the uncontrolled importation of Gooseberry plants; that the disease was most dangerous (having rendered the cultivation of the European Gooseberry on a commercial scale impossible in the United States), and, if once established here, likely to cause growers losses as great as—or greater than—those occasioned by "big bud" in Black Currant plantations.

In consequence of the attention thus directed to the subject, I received information which led to the discovery of the existence of the disease in a large commercial plantation in Worcestershire. Since then, chiefly through the energy of the staff of the *Evesham Journal*, two further outbreaks have been discovered.

As a result of the emphatic warnings I gave of the serious nature of the disease, all growers of Gooseberries in the district have been making the most earnest endeavours to stamp it out, and to track the source by which it is being introduced into the county.

Within the last few days my work in this affected district has been to a certain extent nullified by the visit of the Board of Agriculture's expert. Mr. Massee, as scientific adviser to the Board, has been sent to one of these recently discovered infected areas, and the following statements made in your paper are given on his authority [this is, we are informed, not correct.—ED.]:—(1) The climatic conditions in Worcestershire are against the development of the disease; (2) in Ireland the conditions favoured its growth, but the injury there had been exaggerated; (3) the disease would not necessarily reach the fruit; (4) it seemed clear that the disease was indigenous to the county and not introduced, so that legislation to prevent its importation was unnecessary; (5) the statement that it was impossible to grow Gooseberries in America was a mere figure of speech.

I wish to make the following necessarily brief replies to these statements:—(1) The climatic conditions obtaining in Worcestershire are certainly no less favourable to the spread of the disease there than are those of some of the various countries in Europe, where the disease is now rampant. (2) My articles in the *Journal Royal Horticultural Society*, Vols. xxv., xxvi., xxvii., and xxix. contain the reports—given in their entirety—from all the growers in Ireland with whom I could get into correspondence, and give a detailed account of the annual damage done to the bushes and the crop. The Irish Board of Agriculture, in Leaflet No. 76, speaks of the damage done to the crop, and gives the advice that the safest step is to uproot and burn the attacked bush. (3) Mr. Massee, in his short visit, did not apparently learn that in a certain plantation in Worcestershire the fruit, last year, was so affected by the present disease that it had to be picked over before being marketed. (4) I have mentioned in the papers referred to above certain facts which I obtained that point to the disease having been brought into Ireland on imported stock. Further, in the case of the

* See *Gardeners' Chronicle*, December 1, 1906.

infected Gooseberry standards found in an English nursery, the disease occurred only on the imported plants; also, at Evesham, I obtained information that bushes have been imported from the Continent into this district. Prof. A. de Jaczewski has published facts which show that there is every reason to believe that the disease in Russia was imported from America: and Prof. J. Eriksson, the most eminent economic mycologist in Europe, in his recent article in the *Zeitschr. z. Pflanzenkrankh.*, Bd. xvi., traces the spread of the disease in Europe to three distinct sources. Mr. Massee must be well aware of these scientific opinions, yet gives credence at once to the statement of an unscientific person—the manager of the nursery—that the disease "had been there thirty years," and publicly states his opinion that the disease is indigenous to the country, and that legislation to prevent its importation is unnecessary. Even supposing that the disease is of long standing in Worcestershire—which has yet to be proved—it is an incontestable fact that it is becoming so prevalent on the Continent that it would still be necessary to prohibit the uncontrolled importation of Gooseberry bushes. (5) The statements which I have made that the cultivation on a commercial scale of the European Gooseberry in America has been rendered impossible by the susceptibility of the plant to this disease are based on the facts given in the Year Book of the Department of Agriculture (United States) for 1899, in the Report of the Commissioners of Agriculture for 1877 (Washington), in Bulletins 114 and 161 of the New York Agricultural Experimental Station, and on information supplied to me by Prof. S. A. Beach, one of the chief authorities in America on the cultivation of Gooseberries.

This is not the place to bring forward further scientific facts, which show the dangerous character of the present disease, and the need for immediate legislative action to prevent more diseased stock coming into the country. One serious misstatement made by Mr. Massee on the manner in which the disease could be imported on bushes I corrected in the *Gardeners' Chronicle* in January last; but this has not prevented Mr. Massee from repeating it in a chapter on "Legislation and Disease" in his recently-published book.

Since I believe that the most energetic and consistent action, assisted by careful expert advice, is now required from the Board of Agriculture to save Gooseberry growers from great losses, I ask that the Board shall investigate the value of the opinions of its scientific adviser on the present disease by submitting the question to some independent and competent scientific authority in this country or abroad. The Board should then state publicly the decision arrived at, and if it is decided that the danger is as serious as I believe it to be, the Board should at once send an official to the affected areas in Worcestershire to repair, as far as possible, the mischief caused by the statements which Mr. Massee has circulated in the district to the effect that the danger has been exaggerated, that no legislation is necessary, and that the disease has not been introduced through the purchase of foreign Gooseberry bushes. I ask that the investigation shall be carried out immediately, since it is useless to expect growers to carry out sufficiently drastic measures in face of the statements which will be widely circulated as the opinions of the scientific adviser of the Board of Agriculture. *E. S. Salmon, F.L.S., Mycologist to the Wye Agricultural College.*

———At the last meeting of the Worcestershire County Council, the Agricultural Committee reported an outbreak of American Gooseberry-mildew at two places in Worcestershire, one a nursery, and that the Board of Agriculture's expert believed the outbreak was not confined to one nursery. It was decided to petition the Board of Agriculture to take steps to obtain powers to deal with diseases of plants such as existed in the case of diseased animals and to prevent the importation of the plants. It was further decided to carry out the inspection of nurseries and gardens in the county to detect any further cases. A similar resolution was, we learn, passed by the Council of the National Fruit Growers' Federation on the 11th inst.

HOME CORRESPONDENCE.

PHEASANTS AND GUNNERAS. — Pheasants damage the Gunneras here in the same manner as described by Mr. Bartlett on p. 396—more especially those in high and sunny situations, and not only do they attack the foliage, but the crowns. To prevent them we put some twiggy sticks around, and this is effectual. I do not think they eat any portions, but they seem as if they suck the juice which exudes after a wound has been made. *W. A. C., Leonardslee.*

BLACKBIRDS AND TOMATOS. — Blackbirds make excellent meals from these, and will even go through the ventilators after them. Peacocks also will devour them greedily when growing on the wall. They will reach up and destroy all they can that have any colour. When these birds attack them they must be driven off or they will continue the attacks. *W. J. Cook, Leonardslee.*

——— It is nothing new to me to watch blackbirds and thrushes helping themselves to often the largest and best fruit on the plant. This year in particular the fruits attracted these birds more than usual. It is curious that our Raspberries are seldom attacked by the blackbird or thrush. I don't know if this is the case in other gardens. Peacocks have a great predilection for the Tomato, but the palate of the peahen seems more exacting. For some seasons past I have at various times, when all was quiet, suddenly surprised this bird ravenously devouring one of the brightest coloured fruits; with consciousness and skill he makes a sufficiently large hole, that the interior may be got at without devouring the skin. During its final ripening stage the Morello Cherry is not immune from attacks by the peacock, and I have to take extra precautions to have the nets well fastened to the ground, at some distance from the walls, in order to protect this fruit. It is a recreation for thought and brain to watch the vagaries of birds and animals, &c. The freaks of the hedgehog much amused, and at first baffled me last year. Although securely protected by nets, the fruit on the lowest branches of a Morello Cherry tree, and near the garden door, disappeared excepting the stones, which were left hanging; the fruit on either side of the centre of the tree up to 2 feet high bilewise disappeared. As no birds could reach them the mischief was attributed to rats, and this idea seemed probable, because some of the gravel had been scratched away from the door, a regular run having been formed. I gave instructions for a trap to be set just inside the fish-netting close to the wall, and the traps were to be brought on the following day. The depredator, however, brought about his own end; in making another excursion that night, it became entangled in the fish-netting and was found next morning dead: subsequently two others were caught in the trap, and with their capture the fruits remained secure. *W. H. Clarke, Aston Rowant, Oxon.*

——— Some correspondents seem to think that the fact that blackbirds eat Tomatos is an entirely new thing. We grow here quantities of Tomatos outside in the open, and each season, for the past seven years at least, the blackbirds have been a perfect pest, attacking the fruit as soon as it commences to colour a little, and I am not quite certain but I think thrushes too eat these fruits. It is not so much what they eat as what they spoil that matters. *C. D. Buss, The Nurseries, Lodge House, Smeeth, Kent.*

——— In reference to the notes which have recently appeared in the *Gardeners' Chronicle* on this subject, I may say that here (Essex) for several years in succession large coveys of the audacious sparrow have made determined and continuous onslaughts on field Tomatos as soon as the fruits began to colour and until the crop was finished. The attacks are only rendered less frequent and damaging by shooting at the rogues when, on the approach of the somewhat irate grower, they rise *en masse*. Blackbirds, and even the tolerated robin, all join in disfiguring and demolishing a large percentage of the ripe fruit if not closely looked after. This is best done by picking and sizing the fruits as soon as they begin to colour, and placing baskets containing them in a glasshouse in which a dry, airy atmosphere is maintained, for 12 hours or so, to bring up the proper degree of colour in the fruits before sending them to market. *H. W. W.*

CHRYSANTHEMUMS AT THE CRYSTAL PALACE. —If *A. J.* (see p 377) lives in Essex, his expenses to exhibit in the great Vase class alone would probably amount to £3 or £4. Little wonder then that few gardeners enter in a class entailing such an outlay, unless they are tolerably sure of getting into the prize-list. The three dozen vases staged in this class at the last show, with a table over 100 feet long all to themselves, did not produce the effect they would have done had they been arranged more closely together, and a double row of triplets would have been much more effective. Twelve varieties, three blooms of each, are as many as most gardeners can find. A greater number than this makes a nurseryman's class of it, and, if my memory is not at fault, it has generally been won by a nurseryman. Much as I admire Chrysanthemums in vases, I think it will be a pity if the time should come when the showing on boards is [entirely] abolished by the N.C.S., for there are hundreds of gardeners and amateurs who visit these shows annually for the sole purpose of selecting the varieties to grow in the ensuing year, and it is only on the boards that any great variety is found. Independently of those shown on the boards, I do not suppose there were many more than two dozen varieties of Japanese Chrysanthemums staged in competition at the November show. Whatever other societies may do, there is surely room enough for both methods at the shows of the N.C.S. *C. J. D., Sussex.*

VIOLETS.—I can fully endorse all that Mr. W. Honess has said respecting this valuable variety La France. I find that for "pot work" nothing better could be wished for. I also have it planted outside with Princess of Wales and the Czar; the latter is by far the most free-flowering and hardiest of the three, and as quantity is generally the first requisite the gardener has to lean a little that way. The flowers of La France are large, have long stalks, and, unlike most varieties, show themselves well above the foliage, but Princess of Wales I find is hardly worth growing with the first two mentioned varieties. I intend after this season to grow all double varieties in 6½-inch pots. Having tried several I find they throw more freely in pots, produce larger flowers, and are less liable to damping. With a good ash bottom to the frame slugs and woodlice are less troublesome; they can also be moved to a slight shelter in the spring to finish their flowering should the frames be required for other purposes, most gardeners being hard pushed for room during the spring months. The frames too will benefit greatly under this system, as when filled with soil to within a few inches of the top they soon decay. I enclose a few flowers of La France from 8-inch pots in frame [excellent examples], the Czar and Princess of Wales from outside, Marie Louise and Mrs. J. J. Astor from 6½-inch pots in frame, and Lady Hume Campbell from frame. I find Mrs. J. J. Astor the best of all doubles, being free and continuous flowering from the end of September to the beginning of May. *F. G. Brewer, Bryntirion Gardens, Bontddu, near Dolgelly, N. Wales.*

SILVER LEAF DISEASE.—This disease is more prevalent in some localities than in others, and it is especially found in places where the soil is not naturally suited to the growth of the Peach, as in the case of a stiff, cold clay. I have tried most of the remedies suggested, but without success, and have found the destruction of the affected trees the best course to pursue. One characteristic of the disease is that it develops between the fall of the leaf and the commencement of growth in spring. The first indication of its presence is seen just as the young leaves begin to unfold, when they present the well-known silvery appearance. A season is thus lost before it can be dealt with. It is a rare occurrence to see the whole of the tree diseased, and it may affect a branch only, or even a part of a branch, or one side of the tree. In the spring of 1905 a tree of Early Rivers Nectarine in an early house in these gardens was completely covered with silver leaf disease, and my disappointment was great, for this tree was intended to furnish our earliest fruits.

We shaded the house, lightly, but more completely, as the sun gained power, as bright sunshine causes the leaves to drop. The fruit lacked both size and flavour. Early in October we removed the tree, cleared out all the old soil and furnished new, and planted another tree from a later house on the same site. I was very surprised to find that the roots of the affected tree showed no sign of disease whatever, but, on the contrary, all were clean and healthy. So instead of putting it on the fire I planted it as an experiment against a wall facing to the south south-west, and I am more than pleased with the result of that experiment. We picked from that tree in August last four dozen full-sized, highly-finished fruits. The growth of the tree was clean and healthy, and showed not a sign of disease. I should add that not a particle of the old soil was allowed to remain on the roots. I attribute the crop of fine fruits to early planting in new loam, and I am more than ever convinced that the condition of the soil is in every case responsible for the spread of this disease. *James Fulton, Grims Dyke, Harrow Weald.*

ROBIN HOOD SECTIONAL BOILERS.—Having had one of these boilers under trial for one year, I am convinced of its great advantages over boilers of the old-fashioned types. It is more easily worked and is more economical in the consumption of fuel. It affords a steady heat, and is clean and smart in appearance. There has been another placed in a position for the heating of the mansion, and I am told that it does more work in two hours than the old one used to do in 36 hours. At South Lodge, a neighbouring residence, Messrs. Foster and Pearson have put in two Robin Hood boilers, and the proprietor is so pleased with the results that two more are now being added. Mr. Moody, the gardener, speaks highly of their qualities. *W. A. Cook, Leonardslee Gardens.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 11.—The last meeting of the committees for the present year was accompanied by an attractive exhibition of rather less extent than usual. Orchids were the dominating feature, and several fine displays of these flowers were made. The ORCHID COMMITTEE recommended four First Class Certificates and eight Awards of Merit to novelties.

The FLORAL COMMITTEE had not occasion to make any award to a novelty, and the principal groups before the committee were composed of Conifers and other shrubs, Begonias, Orange trees in fruit, flowers of Zonal Pelargoniums, and winter-flowering Carnations.

The FRUIT COMMITTEE recommended an Award of Merit for a new culinary Apple, raised by that successful veteran raiser, Mr. ROSS, of Welford Park Gardens, and there were several collections of Apples and Pears exhibited, the best exhibit of Apples being one from Lord Aldenham, for which the "Hogg" Medal was awarded.

The lecture which had been announced for delivery on Tuesday could not be read, having been delayed during its transit from Japan.

It may be added that, in referring to the meeting as the last for the present year, it is the calendar year that is meant, for, as most of our readers are probably aware, the society's year does not terminate until February next.

Floral Committee.

Present: H. B. May, Esq., in the chair, and Messrs J. Green, T. W. Turner, G. Reuthe, C. J. Salter, W. Bain, C. E. Shea, C. E. Pearson, W. P. Thomson, E. H. Jenkins, W. J. James, C. T. Druery, J. W. Barr, J. Douglas, Jas. Walker, J. T. Bennett Poë, H. J. Cutbush, J. F. McLeod, W. Howe, C. Blick, J. Jennings, A. R. Goodwin, and R. Hooper Pearson.

Messrs. JOHN WATERER & SONS, Ltd., Bagshot, Surrey, showed an extensive group of decorative shrubs of various kinds. Hollies were very fine, and included a capital standard of "Waterer's Gold," a very effective variety; "Golden Queen," and the newer "Golden King" were shown as freely-grown, well "coloured" specimens. Thuya plicata var. zebrina was attractive by reason of its elegance of habit and distinct colouring; Osmanthus myrtifolius and the variegated variety were good, also Cupressus in many varieties. Taxus fastigiata alba, Picea Parryana glauca, P. concolor, and many other good "foliage" shrubs. (Silver-Gilt Flora Medal.)

There were several exhibits of Gloire de Lorraine Begonia. One from F. A. BEVAN, Esq., Trent Park, Barnet (gr. Mr. PAIT), was composed of plants which furnished one side of a long table, and the type, together with the white-flowered "Turnford Hall" variety, all growing in pots 5 inches in diameter, were excellent specimens. (Silver-Gilt Flora Medal.)

Another extensive exhibit of these plants came from E. H. BROWN, Esq., Highwood, Roehampton (gr. Mr. Bradford). The type and white variety were again shown in 5-inch pots, the exhibit consisting of 70 or more plants about 2 feet high, were perfect pyramids. The same exhibitor had a group of plants of Euphorbia (Poinsettia) pulcherrima, with well-developed bracts. (Silver Flora Medal.)

Major NELSON GEORGE, Lovell House, Lowfield Heath, Crawley (gr. Mr. W. T. Wilks), exhibited the same Begonia growing in 8-inch pots.

Some plants of Euphorbia pulcherrima were shown with a few other decorative plants by Lady SALISBURY, Hatfield House, Herts (gr. Mr. H. Primett).

A capital group of Orange trees (Citrus sinensis) in pots was shown by Messrs. W. CUTBUSH & SONS, Highgate Nurseries, London, N. The plants were of considerable size, freely fruited, and they exhibited excellent cultivation. (Silver Banksian Medal.)

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited some of their fibrous-tuberous-rooted Begonias described on p. 374. Winter Cheer and Julius were the varieties shown on this occasion. Jacobinia coccinea and J. chrysostephana were included in the group. (Silver Flora Medal.)

Messrs. HUGH LOW & Co., Clapton, exhibited a few Cyclamens of many varieties, also hard-wooded flowering plants such as Ericas, Acacias, &c., in flower; Euphorbia pulcherrima, with developed bracts, and a few winter-flowering Carnations.

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey, exhibited nice dwarf plants of Aucuba vera abundantly decorated with their red fruits; also Euonymus latifolius albus.

Mr. H. BURNETT, Guernsey, made a pretty exhibit of flowers of "Mrs. H. Burnett," his new pink, winter-flowering Carnation. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited forty trumpet-shaped glasses, furnished with flowers of Zonal Pelargoniums in much variety, and of such brightness as was not equalled by any exhibit in the hall. (Silver Flora Medal.)

Chrysanthemum Annie, as exhibited by Mr. A. NOBBS, Beechhurst Gardens, Hayward's Heath, is a small single, white or tinted-flowered variety with rolled florets.

Messrs. W. WELLS & Co., Merstham, Surrey, contributed flowers of a number of varieties of decorative and "single" Chrysanthemums.

Messrs. J. PEED & SON, Roupell Park Nurseries, Norwood, exhibited a large number of Alpine plants in small pots.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., showed a few Narcissus "White Hoop Petticoat" in flower, Iris alata in flower, &c.

The Misses HOPKINS had a few hardy flowering plants.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair, and Messrs. Jas. O'Brien (hon. sec.), De B. Crawshay, Francis Wellesley, Norman C. Cookson, W. A. Bilney, W. Bolton, G. F. Moore, W. Thompson, H. G. Alexander, H. A. Tracy, W. H. Young, J. Charlesworth, F. J. Thorne, W. H. White, W. Cobb, T. W. Bond, Arthur Dye, A. A. McBean, and W. Boxall.

G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), staged a grand group extending two-thirds of the end staging in the Hall, and almost as great a space on the side, the whole forming a charming display, for which the society's Gold Medal was voted. The group, which was composed principally of fine Cypripediums, and especially of varieties of C. insigne, of which there were about two hundred forms, was tastefully arranged with selections of Oncidium varicosum, Vanda cœrulea, Dendrobium Phalænopsis, Odontoglossums, &c. Among the very remarkable collection of C. insigne were C. insigne Harefield Hall, with 17 flowers; a most complete sequence of yellow forms of which Sanderæ is still the most beautiful. Others noted were C. insigne Kathleen Corser, Louisa Dean, Oddity, Perfection, Bourton Gem, montanum magnificum, Parc Leopold, Dormanianum, Majestic, Victor, &c. The forms of C. Leeanum were equally well represented, and among specially good hybrids were C. Blanche Moore, C. Mrs. E. V. Low, four forms of C. Niobe, and a very good set of varieties of C. Actæus. The immense number of specimens staged were splendidly grown and finely flowered.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), was awarded a Silver Flora Medal for an effective group of varieties of Cypripedium insigne, among which were good C. insigne Harefield Hall, and several C. insigne Sandera, various pretty Lælio-Cattleyas raised at Gatton Park, the best being several forms of L.-C. epicasta and L.-C. Phryne. The ends were of scarlet Sophronitis, and noted as specially good were Masdevallia cucullata with 13 dark claret flowers, &c.

The Lindley Medal was awarded to Mr. C. J. Salter (gr. to Mrs. T. B. HAYWOOD, Woodhatch, Reigate), as a reward for fine cultivation of a very remarkable collection of 18 large specimens of the pure white Masdevallia tovarensis, each with over 100 spikes of flowers.

Messrs. HEATH & SON, Cheltenham, staged a very effective group of Cypripediums, for which a Silver Flora Medal was awarded.

Messrs. JAS. CYPHER & SONS, Cheltenham, staged a very nice group of good and rare varieties, for which a Silver Flora Medal was awarded. The group contained a very fine selection of Cypripedium insigne, C. Leeanum, and other favourite classes; C. Fairrieanum, varieties of C. Niobe, various Odontoglossums, and, among other good species, a fine Odontoglossum Uro-Skinneri, with a very prettily spotted labellum.

Messrs. SANDER & SONS, St. Albans, secured a Silver Banksian Medal for a very interesting group, the leading plant in which—Cœlogyne Mooreana—securing a First Class Certificate (see Awards). In the centre was a fine orange-lipped form of Dendrobium formosum giganteum, on each side two richly-coloured Vanda Sanderiana, and with them Saccolabium bellinum, Pilumna laxa, Lælia Gouldiana, varieties of L. anceps, Cypripediums, &c.

Messrs. J. W. MOORE, Rawdon, Leeds, staged a group of Cypripediums, with which were Cymbidium Cravenianum (Lowianum × Tracyanum), with pretty, whitish flowers striped with red; Lælio-Cattleya Helena, Oncidium ornithorhynchum, &c.

R. I. MEASURES, Esq., Camberwell (gr. Mr. Smith), was awarded a Bronze Banksian Medal for a selection of hybrid Cypripediums and other Orchids, including one of the rare Miltonia Endresii, and some Restrepias, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking, again showed the beautiful Cypripedium Thalia Mrs. Francis Wellesley and C. T. giganteum (see Diploma Awards); C. Fred Hardy superbum, C. Curtiso-præstans, C. tonsum (Westfield variety), C. Charlesianum Rex, the pretty pale yellow Lælio-Cattleya Norba superba, and others.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), showed some new hybrids, including the handsome Lælio-Cattleya rubens var. Pan (see Awards).

DREWETT O. DREWETT, Esq., Riding Mill-on-Tyne (gr. Mr. Renwick), staged a number of fine Cypripediums, principally varieties of insigne, nitens, and Actæus, most of them cut flowers.

S. BRIGGS-BURY, Esq., Bank House, Accrington (gr. Mr. Wilkinson), showed several rare Cypripediums.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford, showed Odontoglossum Wilckeanum, Fowler's variety, a very handsome form; a singular O. luteo-purpureum hybrid, and the fine O. amabile Glebelands variety (see Awards).

Mr. G. W. MILLER, Clarkson Nurseries, Wisbech, sent a very fine form of Odontoglossum Andersonianum.

R. G. THWAITES, Esq., Streatham (gr. Mr. Black), showed Sophro-Cattleya Doris, with a cinnabar-scarlet flower of good size.

The Earl of TANKERVILLE, Chillingham (gr.

Mr. Hunter), showed Cypripedium nitens, Chillingham variety.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, showed a bunch of cut sprays of the singular Lælia Briseis.

Messrs. HUGH LOW & Co., Enfield, staged a group, in which were Cypripedium insigne "E. J. Seymour," a large and effectively marked variety; Cattleya Clarkiæ; a selection of varieties of Cypripedium insigne, &c.

Messrs. EDGAR & Co., South Woodford, staged a selection of Cypripediums.

Messrs. LINDEN, Brussels, showed two magnificently blotched varieties of Odontoglossum crispum, raised by crossing fine spotted imported forms. The darkest was O. Madame Linden (O. crispum Queen Emma × O. c. Prince Albert), a grand form with the greater part of the broad segments of a rich claret colour, thin lines of white showing between the colour. The lighter and larger flower was O. crispum Jean Linden (O. c. Lindenii × O. c. primatus). The large flowers had broad, white-fringed segments, the sepals and petals of which were heavily blotched with reddish orange colour.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Dusseldorfei var. Undine (intermedia alba × Mossiæ Wageneri) from Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A very pretty and distinct snow-white variety, with but the slightest trace of primrose-yellow at the base of the broad front lobe of the lip.

Cypripedium Actæus Langleyense (insigne Sanderæ × Leeanum giganteum) from Major G. L. HOLFORD. The fine form for which Messrs. Veitch were given an Award of Merit, January 23, 1900, and in which the dorsal sepal is large and white, with but a small greenish base and a few purple markings.

Cypripedium choraicum, from J. H. CRAVEN, Esq., J.P., Keighley (gr. Mr. Corney). Said to be the result of crossing C. insigne Harefield Hall and C. nitens magnificum Ball's variety, and with very strong resemblance in some points to C. insigne Harefield Hall.

Calogyne Moorcana from Messrs. SANDER & SONS, St. Albans. A very handsome white variety, comparable with the rare C. Mossiæ illustrated in the *Gardeners' Chronicle*, March 31, 1894. Flowers seven or eight in arching spikes, each nearly as large as C. cristata, pure white, with a yellow disc to the lip, which has several rows of yellow papillæ.

AWARD OF MERIT.

Cypripedium Wiganianum Westonbirt variety (eburneum × Tracyanum) from Major G. L. HOLFORD. A very handsome variety with ivory-white flowers striped with dotted lines of light purple; lip white with red-brown blotches.

Brasso-Lælia Mrs. M. Gratrix, Westfield variety (B. Digbyana × L. cinnabarina) from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins). The darkest in colour of any form of this pretty hybrid, and good in shape and substance. Colour an almost uniform reddish orange.

Dendrobium Phalænopsis, Gatton Park variety, from JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound). A novelty in colour, and a good flower in every respect. Flowers white with the faintest blue shade, the lip having a tinge and veining of that peculiar slate-blue seen in Lælia pumila, Gatton Park variety.

Odontoglossum amabile, Glebelands variety, from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). A very effective hybrid with large cream-white flowers spotted with purple, the colours being arranged as in some of the best O. Andersonianum.

Cypripedium Actæus, Bank House variety, from S. BRIGGS-BURY, Esq., Bank House, Accrington (gr. Mr. Wilkinson). A pretty variety, with greenish petals and lip, and fine white dorsal sepal, having slight purple-spotted lines.

Cypripedium Zeno, Craven's variety (nitens magnificum × insigne Harefield Hall), from J. H. CRAVEN, Esq., J.P., Beeches, Keighley, Yorks. (gr. Mr. F. Corney). A massive flower differing closely to C. nitens; in colour yellowish, the dorsal sepal finely blotched with purple-brown, the upper part being white.

Cypripedium Actæus superbum from DREWETT O. DREWETT, Esq. (gr. Mr. Renwick). A very fine light-greenish flower with large white dorsal sepal.

Odontioda Heatonense, St. Vincent, from Messrs. CHARLESWORTH & Co., Heaton, Bradford. A very pretty variety, with broader segments than the original, and finely spotted with carmine-rose colour.

DIPLOMA AWARDS.

CYPRIPEDIUM SPICERIANUM HYBRIDS.—*1st Diploma:* C. Niobe, Oakwood variety, from FRANCIS WELLESLEY, Esq. (gr. Mr. Hopkins). *2nd Diploma:* C. Memnon from S. BRIGGS-BURY, Esq. (gr Mr. Wilkinson).

CYPRIPEDIUM INSIGNE.—*1st Diploma:* C. insigne Harefield Hall. *2nd Diploma:* C. insigne Sanderæ, both from JEREMIAH COLMAN, Esq.

CYPRIPEDIUM INSIGNE HYBRIDS.—*1st Diploma:* C Thalia Mrs. Francis Wellesley. *2nd Diploma:* C. Thalia giganteum, both from FRANCIS WELLESLEY, Esq.

CALANTHE HYBRIDS.—*1st Diploma:* Calanthe alpha. *2nd Diploma:* Calanthe revertens, both from JEREMIAH COLMAN, Esq.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., chairman, and Messrs. S. Mortimer, Geo. Keif, A. Dean, E. Beckett, W. Pope, H. Parr, R. Lye, H. J. Wright, J. Vert, P. D. Tuckett, H. Somers Rivers, Jno. Lyne, Geo. Reynolds, J. Davis, J. Jaques, Chas. Foster, O. Thomas, W. Poupart, A. R. Allan, and A. H. Pearson.

Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. E. Beckett), showed a collection of Apples of exceedingly good quality. They were arranged in large and small baskets, dishes, &c., there being about forty receptacles in all. Particularly good were the specimens of Gascoyne's Scarlet, Tower of Glamis, Hollandbury, Gloria Mundi, Golden Russet, Lane's Prince Albert, King of the Pippins, Ribston Pippin, Blenheim Pippin, Lady Henniker, Cox's Orange Pippin, and Golden Noble. (Hogg Medal.)

From the UNIVERSITY COLLEGE, Reading (gardening instructor, Mr. C. Foster), came excellent fruits of the following varieties of Tomato: Winter Beauty, Eclipse, Sutton's Sunbeam, Holmes' Supreme, Carter's Sunrise and Hillside Court. Sutton's Sunbeam, a yellow fruit, is described by Mr. Foster as a very desirable variety, possessing good flavour.

Excellent little Carrots were shown from seeds sown in the open garden in September. These varieties were Champion Horn, Parisian Forcing, Carter's Long Forcing, and Golden Ball. Some roots of Celeriac completed the exhibit. (Silver Knightian Medal.)

An extensive collection of Apples and Pears was shown by Sir LD. G. LODER, Leonardslee, Horsham (gr. Mr. W. A. Cook). Sixteen varieties of Pears were included, and the remainder were Apples. Among the Pears we remarked nice fruits of Marie Benoist, Le Lectier, Doyenné du Comice, Easter Beurré, and Glou Morceau. Some of the best Apples were Court Pendu Plat, Lord Derby, Blenheim Pippin, Golden Noble, Forge, Dumelow's Seedling, Mère de Ménage, &c. (Silver Banksian Medal.)

Nearly fifty dishes of Apples and Pears were shown by the Dowager Lady HILLINGDON, Wildernesse, Sevenoaks (gr. Mr. J. Shelton). The best Apples were Lord Derby, Blenheim Pippin, Beauty of Kent, Adams' Pearmain, Cox's Orange Pippin, Newton Wonder, Peasgood's Nonsuch. The six "dishes" of Pears were Winter Nelis, President Barabé, Olivier de Serres Madame Millet, Easter Beurré, and Marie Benoist. (Silver Knightian Medal.)

Messrs. GEO. MASSEY & SONS, 17, Market Place, Spalding, showed very good firm, moderate-sized bulbs of the following varieties of Onion: Bedfordshire Champion, Ailsa Craig, Giant Zittau, White Spanish, and Massey's Excelsior. (Bronze Banksian Medal.)

Several seedling varieties of Apples were shown for certificate, but none gained the approval of the committee except the one from Mr. Ross, Welford Park, mentioned under awards.

Messrs. W. CUTBUSH & SONS, Highgate, London, N., showed fruits of varieties of Tomatos named Muirtown Seedling and Lye's Early Gem. The latter variety received an Award of Merit in September last whilst growing in the R.H.S. Gardens at Wisley.

Several exhibits of Potatos were made, albeit the display of the National Potato Society was expected to be made in the same hall during the week. One of these exhibits was from Mr. R. W. GREEN, Wisbech (Silver Banksian Medal); another from Messrs. GEO. MASSEY & SONS (Bronze Banksian Medal); and a third from Mr. GEO. DEAL, Brooklands, Kelvedon, Essex. (Silver Banksian Medal.)

AWARDS OF MERIT.

Apple "Encore."—This culinary Apple is a seedling from a cross between Northern Greening and Warner's King. The fruits are of very large size, pale yellow, or greenish, with very little red colour on one side, particularly towards the base of the fruit. Eye, very large, open, with reflexed segments, set in a very deep irregularly-formed cavity. Stalk less than an inch long, inserted in a funnel-like cavity as deep as the stalk is long. The fruits appear as if they would keep in good condition until March. Shown by Mr. C. Ross (gr. to Colonel ARCHER HOUBLON, Welford Park, Newbury), who has already raised many good seedling Apples.

LECTURE ON THE WEST INDIAN LIME.

DECEMBER 4.—The paper on the "West Indian Lime," by Mr. Archibald Brooks, of Dominica, read at the recent show of Colonial Fruit, was well illustrated by photographs. Sir Albert Rollit, LL.D., member of the Council, presided, and there was a large attendance.

In the course of his paper Mr. Brooks, himself an old Chiswick student and now superintendent of the Agricultural School at Dominica, gave a short history of the industry in the West Indies, and then described the cultivation, which is principally from seed, but he pointed out how much yet remains to be done by selection, to get a thin-skinned fruit full of juice and containing an average of about two seeds. He mentioned the serious loss and damage caused by the Orange mussel scale (Mytilapsis citricola) and the Orange snow scale (Chionapsis citri), which together in 1902 seriously threatened the industry, many of the trees being killed outright, and left as if bleached with fire. The Imperial Department of Agriculture then recommended that the trees should be sprayed with rosin and whale oil soap compound, which proved very effective.

The fruit is collected after it has ripened and fallen to the ground, and the essential oil is then extracted, after which it is carted to the crushing mill. He showed how each product was extracted and dealt with, and pointed out that the exports of Lime products from Dominica had risen from £282 in 1848 to £45,370 in 1902, but the export in 1903 had, on account of the scale-insects referred to, fallen to £23,470, but in 1905 they had recovered to the value of £40,000, this sum including the amounts for Raw and Concentrated juice, Essential Oil, Green and Pickled Limes, and Preserved Peel.

At the close of the lecture Sir Albert Rollit said: The paper was an excellent illustration of the fruit show in the exhibit from the West Indies, and especially from Dominica. Both the paper and the show indicated the industrial regeneration of the West Indies, one of our very oldest colonial possessions. Formerly, the islands were practically dependent on the sugar crop, and a staple trade was always dangerous. There was safety in variety. Of this there could be no better illustration than the Portuguese island St. Michael's, which was once a great Orange-growing country, the trade of which decayed, though it is now reviving. Man could not live by Sugar-cane alone any more than by bread, or, for that matter, by Bananas. He should also add that the West Indian islands had not only staked everything upon one product, but they had not been quite up-to-date with their competitors with modern machinery and appliances. Still, this was now greatly improved, and nothing was more welcome than shipments from the West Indies, especially when they were so excellent as those in the show. He knew well one rival of the West Indies which was, indeed, quite close to them—Florida. Here the Oranges, as in the West Indies, and the Pineapples, grown under a wide open lattice and protected by wood fires which had only to be lighted three or four times in a normal season, were among the finest in the world. He had himself grown many of the Citron fruits in Yorkshire under glass, and Limes, Lemons, Tangierines, Grape fruit, &c., could be so grown in plenty and perfection, but edible Oranges were more difficult to fruit well, and the beauty of such products was difficult to excel in their florescence, in fragrance, a property which was now

too often sacrificed to other qualities, and in the appearance of the fruit, while the commercial importance of the fruit of the Lime could not be over-estimated, inasmuch as the supply of it to sailors as an anti-scorbutic, was a statutory obligation in the Mercantile marine. The paper contributed much most useful and interesting information, and he moved a vote of thanks to Mr. Brooks for the care he had bestowed upon it. This was carried by acclamation.

PUTNEY AND WANDSWORTH CHRYSANTHEMUM.

NOVEMBER 29.—The annual dinner of the members and friends of this society took place on the above date at the Spread Eagle Hotel, Wandsworth. The chair was occupied by Geo. Britten, Esq., and there were nearly 90 persons present, including some ladies. This society has held annual exhibitions for 30 years past, and there appears the same enthusiasm for the cultivation of Chrysanthemums as formerly. Speeches were made by the chairman, and by Messrs. J. McKerchar (vice-chairman), Rawlings, McLeod, Reynolds, Dawkins (James Veitch & Sons), Smith, Bradford, Pearson, &c. The toasts were interspersed in a first-class programme of vocal music.

NATIONAL SWEET PEA.

DECEMBER 6.—The annual meeting of the members of this society took place at the Hotel Windsor, Westminster, on the above date. Mr. A. Watkins, president, presided over a moderate attendance.

EXTRACTS FROM THE REPORT OF THE EXECUTIVE COMMITTEE.

"The Royal Horticultural Hall, Westminster, was selected as the best place for the society's sixth exhibition. The date, July 5, was somewhat early for a season that was unusually backward and trying. The competition was very keen, but the general effect of the exhibition was slightly marred by some bare staging where members failed to fill their entries. Steps will be taken to prevent this waste of space in future. In the competitive classes 1,949 bunches of Sweet Peas, in 153 varieties, were staged.

The society's "annual" was an unqualified success, and the sales to non-members amounted to nearly double those of 1905.

The provincial show held at Ulverston, on July 20, in connection with the North Lonsdale Society's Rose Show, must be regarded as the success of the year. There was a record attendance for Ulverston, £142 being taken at the gate. There were no fewer than 1,081 bunches of Sweet Peas in competition.

The committee wishes to thankfully acknowledge its indebtedness to the authorities at the University College, Reading, for permission to hold its trials of new Sweet Peas in their gardens. To Mr. Chas. Foster, superintendent of the Horticultural Department, the committee also tenders its best thanks for his able conduct of these trials, and heartily congratulates him upon the splendid manner in which the Sweet Peas were cultivated. Further trials will be conducted at Reading in 1907, and an endeavour will also be made to determine which are the best varieties, new or old, for cultivation in clumps for garden decoration.

The retirement of Mr. Horace J. Wright from the post of hon. secretary was the only misfortune sustained by the committee during the year. The committee, as a small token of its appreciation, unanimously voted him a Gold Medal.

No fewer than 184 new members, drawn from England, Scotland, Ireland, Germany, France, Belgium, British Columbia, United States of America, Cape Colony, and far-off New Zealand [were admitted].

Ninety-five new, or presumably new, varieties of Sweet Peas were entered for the society's awards on July 5 at the London show, and 38 on July 20 at Ulverston. The following are the awards made:—First-Class Certificate and Silver Medal, as the best variety, to Audrey Crier, from Mr. C. W. Breadmore, Winchester. Awards of Merit were made in favour of the following:—Horace Wright, Maud Guest, and Princess Maud of Wales, from Mr. H. Eckford, Wem. Elsie Herbert, Etta Dyke, and Mrs. Collier, from Mr. C. W. Breadmore, Winchester (the latter variety was shown as Dora Cowper, but subsequently proved to be identical with a variety previously shown as Mrs. Collier; Mr. Breadmore has agreed to use the title Mrs. Collier to avoid confusion of names). Queen of Norway and Tom Bolton, from Mr. R. Bolton, Carnforth. Mrs. Rothera, from Messrs. T. Rothera & Co., Burton Joyce, Notts. The Marquis, from Messrs. Dobbie & Co., Rothesay. Queen of Spain (Hurst's), from Messrs. Hurst & Son, 152, Houndsditch, London, E.C.; the committee requested that this name be altered, as a variety bearing a similar name had already been before the public.

The committee has decided on the formation of a Floral Committee composed of 12 members, and consisting of seven amateur and five trade growers, the chairman to be an amateur. The Floral Committee will meet in a private room at 11 a.m. on the morning of the exhibition, and all varieties will be presented to them under number only. Every member must vote. A two-thirds majority of those present will be necessary to secure an Award of Merit, but a five-sixths vote passed on a variety that has been on trial at the society's trials at Reading University College will secure a First-Class Certificate. The society's Sweet Pea trials will be inspected by the Floral Committee before it sits in judgment upon new varieties.

The society's "annual" for 1907 promises to be as full of interest and information as previous issues.

To the Horticultural Societies at Dublin, Edinburgh, Cardiff, Southampton, Ulverston, and Wolverhampton the committee has offered one Gold and one Silver Medal each, to be competed for at their exhibitions, and the committee has suggested to these societies that the medals be offered as prizes in an "Audit class." Silver Medals have also been offered to several Colonial societies who make Sweet Peas a feature."

The report and balance-sheet were adopted unanimously. Votes of thanks were passed to retiring officers, and the following officers were elected or re-elected:—President, Sir George Cooper; chairman of committee, Mr. Leonard Sutton; treasurer, Mr. Edward Sherwood; hon. sec., Mr. C. H. Curtis.

Several new members were added to the General Committee.

DUBLIN SEED AND NURSERY EMPLOYEES ASSOCIATION.

DECEMBER 8.—The fourth annual dinner and social reunion of this association took place on the above date at the Gresham Hotel, Dublin. Mr A. J. Sinclair presided, and there were also present Prof. Jas Wilson, Mr. D. Houston, F.L.S., and Mr. F. W. Moore, Curator Royal Botanic Gardens, Glasnevin. Congratulatory messages were received from the kindred associations in Glasgow and Edinburgh, and 140 sat down to dinner, the table decorations being arranged and supplied by Messrs. Ramsay, Dickson and Watson respectively. The chairman distributed the prizes to those who had been successful in the various competitions.

Prof. Wilson, in proposing the toast of the "Dublin Seed and Nursery Employees Association," said the seed trade as they knew it at present was not known until about 100 years ago. Two crops which led to this were the Clover and Turnip. About the middle of the last century grass seeds were introduced, and the trade established first at Norwich, gradually spread, and prosperity had followed it ever since.

Mr. J. Rochford, in proposing "Our Employers," said if it were not for them the association would not be in its present position. With regard to their educational programme he thought managers and head-shopmen should see that every member of their staff belonged to that association, attended the lectures, and entered for the competitions held at the end of each season.

Mr. M. Ramsay, in reply, said they owed a deep debt of gratitude to Mr. Houston, and advised the young men to study, learn and cultivate themselves in every department.

"Our Guests" was suitably proposed by Mr F. G. Bell, and responded to by Mr. F. W. Moore, who expressed astonishment at the progress made by the society during its short career. Where there was not intellectual activity there could be no business progress. Competition was becoming keener every day, and they also had to face co-operation, which could be met by ability in business and conscientiousness in work. With this competition in front of them they had maintained their position, and there was no reason why they should not keep the whip hand. He thought perhaps Irishmen wanted more self-confidence, determination, and originality.

NATIONAL CHRYSANTHEMUM.

DECEMBER 10.—A meeting of the Executive Committee was held on this date at Carr's Restaurant, Strand, Mr. Thomas Bevan presiding. After the usual preliminaries, there was some discussion on a point of interpretation in the schedule of the Eastbourne Society, which was duly dealt with. An interim financial statement was then presented by the secretary, Mr. R. A. Witty, showing a balance in hand, which it was hoped would be materially augmented before long by the receipt of the money due from the Crystal Palace Co.

Some discussion next ensued upon the question of shows for 1907, some members advocating the abolition of the December show, others suggesting the removal of that and the October show to a more central place in the metropolis. It was finally resolved that three shows be held in 1907, and that they take place on October 2 and 3, November 6, 7, and 8, and December 4 and 5.

The dates of the Floral Committee meetings were then fixed. There will be one on the first day of each show, wherever held, and others at the Essex Hall on September 16, October 14 and 28, November 18, and December 2.

The Executive Committee will meet as under:—September 16, October 28, November 18, December 9, 1907, and January 13, 1908.

Members of the society desirous of contributing to the fund for the erection of a monument to the memory of the late Comte Oswald Kerchove de Denterghem, of Ghent, can do so through the society's foreign secretary, Mr. Harman Payne, who is authorised to receive donations as a member of the international committee appointed for the purpose.

DECEMBER 12.—The third exhibition of market varieties of Chrysanthemums held under the auspices of the above society took place on this date in the Foreign Flower Market, Covent Garden. The Chrysanthemum, as grown and displayed for market purposes, is probably seen at its best as a decorative flower, and the varieties are selected chiefly for their brilliancy of colouring and freedom of flowering. Thus many old varieties, such as W. H. Lincoln and Avalanche, are still grown, but the cultivator is not slow to seize upon the latest kinds if they show any advance for his purpose, thus Rivol, Mad. P. Radaelli, and Mdlle. Louise Charvet were noticed extensively among the exhibits. Messrs. PHILIP LAPPS were awarded the Silver Bowl offered to the winner of the greatest number of prizes in the exhibition.

MARKET GROWERS AND NURSERYMEN'S CLASSES.

Cut blooms.—Three exhibits were staged in a class for a collection of market Chrysanthemums in bunches, 12 blooms in a vase, the whole occupying a table space measuring 15 feet by 3 feet, and of these the best was shown by Messrs. PHILIP LAPPS & SON, Swanley, Kent. This exhibit was remarkable for the freshness, brilliancy, and general high quality of the blooms. Some of the more notable examples were Mrs. Judson, Snowdrift, both white Incurveds; Buttercup, a yellow Incurved; Lady Violet Beaumont, a splendid red flower; Framfield Pink, Golden Age, a Japanese variety of the rose-yellow colour; Mad. P. Radaelli, &c. (Small Gold Medal); 2nd, Messrs. CRAGG, HARRISON & CRAGG, Merrivale Nurseries, Heston, Hounslow, who also had first-class material, but it was less effectively staged. This firm showed Mrs. F. Judson, Mad. T. Panckoucke, White Cheer, Frank Hammond, F. J. Brooks, &c. (Silver-Gilt Medal); 3rd, Mr. F. S. GOUNDRY, Heathside Nursery, Dartford Heath.

A similar but smaller class was also provided for a collection of market Chrysanthemums in vases, the space occupied measuring 10 feet by 5 feet. Mr. J. TULLEY, Rose Nursery, Enfield Highway, was the only exhibitor, and he was awarded a Silver-Gilt Medal. Only one exhibit was also staged in a class for a collection of single Chrysanthemums in bunches, a variety

only in a vase, and not more than three vases of one variety. It was put up by Messrs. CRAGG, HARRISON & CRAGG. A pleasing variety is Lady Windsor, the white florets of which are tipped with vinous red. (Small Gold Medal.)

The best 12 vases of market Chrysanthemums (disbudded), 12 blooms in a vase, were displayed by Messrs. LADDS, who had a highly meritorious exhibit, of such varieties as Messrs. J. Thompson, Mad. P. Radaelli, Lady Violet Beaumont, Framfield Pink, &c., and for which they were awarded a Gold Medal. Messrs. CRAGG, HARRISON & CRAGG, who followed, had a good vase of Mrs. Geo. Beech (yellow), and some magnificent examples of Mrs. Swinburne. (Silver-Gilt Medal.)

Mr. G. ERICKETT, St. Ann's Road, South Tottenham, had the best exhibit among two of sprays of market Chrysanthemums in bunches, not disbudded, with popular kinds of border, single, decorative, thread-petalled, and other types. (Gold Medal.) Messrs. LADDS, who were placed 2nd, had larger flowers, but the assortment was not so good. They showed the beautiful Allman's Yellow very finely.

Groups of Plants.—Two exhibits were staged in a class for six plants of decorative Chrysanthemums in 5-inch or 6-inch pots, as grown for market. The winning group contained charming little specimens freely flowered, some of the smaller being scarcely more than 1 foot in height. They were of popular kinds, and were staged by Messrs. BUTLER BROS., Burr Farm Nurseries, Bexley Heath (Large Silver Medal); 2nd, Mr. F. S. GOUNDSIE, with taller specimens.

In the open classes provision was made for a group of pot-grown market Chrysanthemums arranged in a half-circle measuring 9 feet by 6 feet. Two groups were staged, and Messrs. BUTLER BROS. were again to the fore with excellently-flowered dwarf specimens. (Silver-Gilt Medal.)

In the "colour" classes the best three vases of a yellow variety were shown by Mr. R. WEIR, 3, Forest View Villas, Enfield Highway, in the variety Nagoya, which was a feature throughout the exhibition among the yellow blooms. The best three vases of a bronze variety were shown by Mr. NORMAN DAVIS, Framfield Nurseries, Uckfield, the variety being Mdlle. G. Rivol. Lady Violet Beaumont was shown well in this class. Exmouth Crimson was the best crimson. It was shown by Messrs. CRAGG, HARRISON & CRAGG. Guy Hamilton, splendidly shown by Mr. R. WEIR, won in the class for a white variety. Mrs. J. Thompson was also well shown in this class. The Incurved Mdlle. Laurence Zede, shown by Messrs. J. & S. CHATFIELD, was adjudged the best pink variety.

The boxes of flowers as packed for market formed an interesting feature, and the exhibits must have required much care in judging, for they were all excellent. Mr. D. INGAMELLS showed the winning boxes.

The best novelty in market Chrysanthemums not in commerce was adjudged the variety Snowflake shown by Messrs. W. WELLS & CO., Merstham, Surrey. It is a white sport of Mad. H. Domillet.

THE NATIONAL HORTICULTURAL SOCIETY OF FRANCE.

This important society occupies in France the same position as the R.H.S. does here in England.

The following details are chiefly extracted from a short account given by the secretary, M. Abel Chatenay. The National Horticultural Society of France was founded by decree dated August 11, 1856, with the object of encouraging every branch of scientific and practical horticulture. It holds every year, in May and November, two great shows. The annual subscription is 20 francs (16s.) Minor exhibitions of Dahlias, Roses, Gladiolus, early Chrysanthemums, &c., are also held at different periods of the year in the society's hall in the Rue de Grenelle. Every member receives gratuitously a copy of the society's journal, which appears once a month. At the society's headquarters there is a fine hall, which has been decorated with many hand-some paintings of fruit and flowers by eminent French artists. The library consists of 15,000 volumes arranged in perfect order. The catalogue, edited by M. Geo. Gibault, the librarian, is divided not only into subject headings, but also has a division of authors' names, by which it is easy to find any work that may be required. A supplement to the catalogue has recently been issued. Fortnightly meetings are held, at which all kinds of subjects on horticulture are dealt with. Committees are appointed for special work, and of these there are 12, which possibly accounts for the paucity of special societies in France.

The society awards medals and prizes to exhibitors; it makes awards to authors of new books, and to gardeners for long and faithful service, &c.; £1,200 per annum are given by the society in this way. At the present moment there are 3,870 members, of which 299 are corresponding or [belong to] affiliated societies. *C. Harman Payne.*

ENQUIRIES AND REPLIES.

COCKROACHES.—Can any of your readers tell me the best means to rid an old house of black-beetles? Keating's powder, borax, also various traps, &c., have been tried with very little result. *D. W. H.*

ANSWERS TO CORRESPONDENTS.

ACETYLENE GAS REFUSE: *A. C. W.* We believe that for horticultural purposes the refuse may be used as lime, as was stated by Mr. Andrew in *Gardeners' Chronicle*, February 13, 1904, p. 108.

ARAUCARIA TIMBER: *H. B.* In his recently published *Trees of Great Britain and Ireland* Mr. Elwes says the wood does not show any especially attractive quality. The Earl of Ducie, in our columns, 1900, ii., p. 633, speaks of it as not unlike good deal, but smoother to the touch. On testing a thin batten by breakage, it proved to be tough and strong for its size, but the fracture was abrupt, and showed little longitudinal fibre. The wood is somewhat heavier than ordinary deal.

BOOKS: *F. J. L.* 1, We do not know of a book which treats of these questions. 2, *Greenhouse Construction and Heating*, by B. C. Ravenscroft, price 3s. 10d., post free, from our publishing department.

FUNGUS: *C. B. G.* The fungus found among dead leaves is Tricholoma leucocephala.

GRAPE GROS COLMAR: *Lady D.* The fruit lacks colour because it is unripe. This late Grape requires an extra long season to grow and ripen perfectly and as hot an atmosphere as is generally afforded Muscats. We suspect the vines were not started into growth sufficiently early, or, if they were, the house has not been heated properly. The large size of the berries seems to indicate that the borders are in good condition, and that the roots have been very active, but it should be remembered that where there is unusual vigour there is less certainty of obtaining perfect finish. Start the vine early next season, afford plenty of fire heat, and make the best use possible of the sun heat by closing the vinery early in the afternoon, even if a little ventilation is afforded again late in the evening. We suspect you wrote the words Lady Downes in error. The variety is Gros Colmar.

HEATING A HOUSE 15 FEET LONG AND 16 FEET WIDE: *A. R. G.* You will require six rows of 4-inch hot-water piping to heat your house of the above dimensions in order to ensure a minimum atmospheric temperature of 45° during severe weather in winter. A convenient and efficient way to distribute the six pipes would be to have two flows (one above the other) fixed parallel with, and close up to, the side wall on either side of the house, fixing the return pipes on each side of the central pathway (assuming the house to be a span-roofed structure). If the boiler is set close up to the house, about 300 feet run of 4-inch hot-water piping will be required, including the lengths necessary for connecting the flow-pipes with returns at both ends of the house. If there is no other house to heat besides the one indicated a No. 1 Chatsworth boiler, 21 inches long, 14 inches wide, and 11 inches deep (inside arch) would be required. The actual heating power of this apparatus is 375 feet of 4-inch piping.

KOHL RABI: *Inquirer.* We do not know of anyone in the Stratford Market who would purchase some tons of these roots. Advertise the fact that they are for sale.

LEGAL ARTICLES: *Eucharis.* The articles to which you refer were contributed by a well-known solicitor who, though having the same name, is in no wise connected with the firm of James Veitch & Sons, so that your comments are wide of the mark.

LILY OF THE VALLEY: *W. B.* A new bed may be planted any time before growth is likely to commence in spring, but you should carry out the work when the soil is not soddened by rain or hardened by frost.

MUSHROOM MYCELIUM: *Inquisitive.* We know nothing of the advertisement to which you allude. It may, however, be said, that if the mycelium is that of Agaricus campestris, and the mycelium is alive and in good condition, it would be better for use than ordinary spawn, which is mixed with manure. There would be less likelihood of having trouble from the presence of other species of fungus in the bed, although it should be remembered that the manure and soil forming the bed itself may not be free from fungus pests.

NAMES OF FLOWERS AND FRUITS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *Arthur Price.* Apple Northern Greening; Tyler's Kernel—yes.—*Brocklehurst.* 1, Margil; 2, Pile Russet.—*J. E. Thorn.* We cannot name such undeveloped fruits with accuracy.—*H. W.* 1, Franklin Golden Pippin; 2, Court Pendu Plat; 3, Lady Leunox.—*W. S.* 1, Frogmore Prolific; 2, Deux Ans; 3, Minchull Crab; 4, Hormead's Pearmain; 5, Flemish Bon Chretien; 6, Easter Beurré.—*Daniels Bros.* 1, Norfolk Beefin; 2, Pile Russet; 3 and 4, Frogmore Golden Pippin; 5, Reinette du Canada.—*A. C.* Nouveau Poiteau.

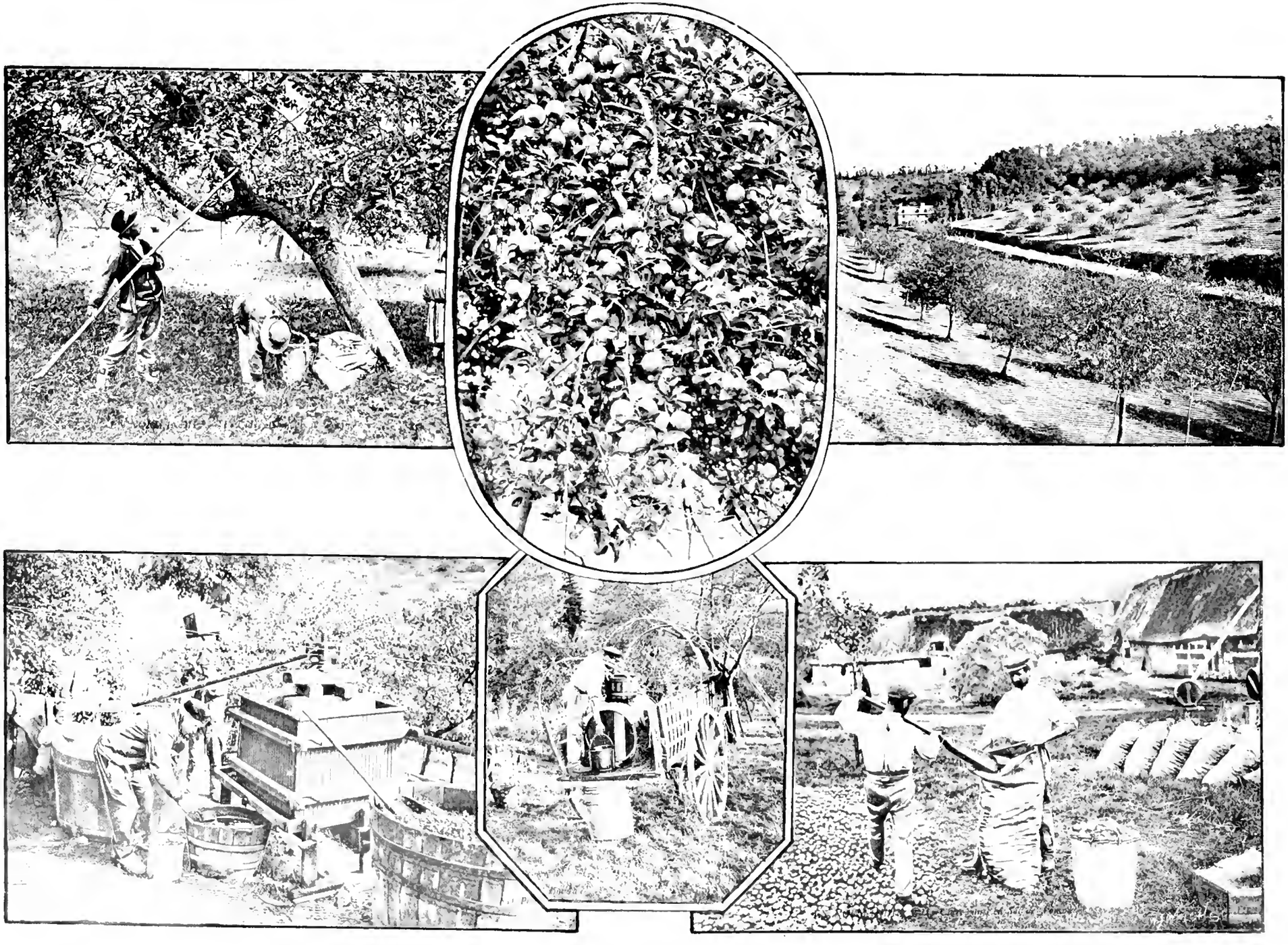
NAMES OF PLANTS: *L. G. T., Kenley.* One of the many forms of Cupressus Lawsoniana.—*P. I.* The white form of Ionopsis paniculata.—*A. R.* 1, Catasetum barbatum; 2, Stelis ophioglossoides; 3, Masdevallia muscosa; 4, M. simula; 5, Pleurothallis rubens; 6, Oncidium pubes.—*H. H.* Vriesia brachystachys, *Bot. Mag.*, t. 6014, and Adiantum Capillus veneris.—*Salop.* Arbutus Unedo, commonly known as the Strawberry Tree.—*O. B.* Heterocentrum mexicanum; Apple (next week).—*C. E. A.* Iris fœtidissima.—*Pomona.*—Alocasia Lowii.

TOMATOS: *A. N.* The swellings on the roots are caused by eelworms. Plants so infested cannot be cured, and should be burned. Mix some gas lime with the soil and let it be placed out-of-doors for three months before making use of it again.

TULIPA GREIGI: *Clansman.* This species was first introduced by Dr. Regel, St. Petersburg, by whom it was named in compliment to General Greig, who was then President of the Imperial Russian Horticultural Union. It has been said that the species was discovered almost simultaneously in Turkestan by two collectors, Sewerzow and Fedschenko. The species appears to have been introduced in 1872 or 1873, and was figured in the *Botanical Magazine*, tab. 6177. The bulbs were selling at 5s. each in 1876, so that it was by no means plentiful at that time. Subsequently Max Leichtlin obtained stock of it, and in all probability did more for its general distribution than the original introducer.

VIOLETS DISEASED: *J. P. R.* The plants are badly affected with the disease described on p. 400 last week in answer to *L. W.*

COMMUNICATIONS RECEIVED.—Boiler—J. H. B.—R. C.—H. T. C.—W. P.—O. B.—H. W.—G. R. Zoe—Beaulieu—J. I. & Son—G. W.—H. F. Mac—L. W.—G. A. Erdbig C. J.—J. A.—M. J. W.—C. P.—L. R. S.—L. J. W.—J. D. G.—R. P. B.—A. D. H. M.—National Fruit Growers' Federation—F. M. H.—J. R. J.—W. H.—W. W. P.—H. W.—E. Molyneux.



THE KINGDOM OF YVETOT—CIDER-MAKING.

(SEE TEXT.)

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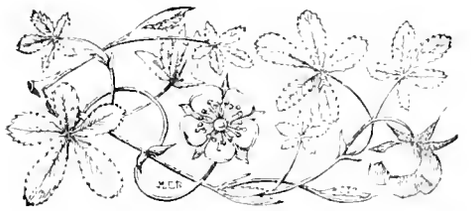


THE

Gardeners' Chronicle

No. 1,043.—SATURDAY, December 22, 1906.

CONTENTS.

ILLUSTRATIONS.

COVENT GARDEN MARKET.

(SEE SUPPLEMENTARY ILLUSTRATION.)

THE new buildings which are shown in our supplementary illustration form an extension of the Flower Market, and have been carried out for His Grace the Duke of Bedford, K.G., and his trustees.

The work was commenced in 1905, when a large area was cleared at the corner of Russell Street and Wellington Street, and in the spring of 1906 the ground floor portion of the building was incorporated with the Flower Market.

About 92 stands have been added to the Flower Market accommodation, and the gangways have been greatly improved, the extension having permitted of direct communication being made north and south through the market between Tavistock Street and Russell Street, and east and west between Wellington Street and the Market Square.

The height of the new portion from floor to ceiling is nearly 30 feet, and the addition is light and spacious.

The basement, including a considerable area below the public footpaths, is approached from Wellington and Russell Streets by means of the usual market step ladders, shoots being provided to facilitate the handling of consignments of Apples, Oranges, &c., awaiting sale. Glass pent roofs are provided on both frontages to afford protection from the weather.

At the angle of the building, and separate from the above-mentioned basements, are coal cellars, &c., for the use of the offices above.

These offices are on the first, second, and third floors, and it is anticipated they will be largely occupied by firms engaged in business either directly or indirectly connected with the market. They are exceptionally well lighted and spacious, and are approached from the corner entrance by means of a handsome staircase, with an electric passenger lift.

In addition to the main staircase, an iron escape staircase is provided at the back, available for use by the housekeeper and the occupants of each office floor in case of emergency.

The system of lighting adopted in the market is an extension of the high-pressure gas system recently installed in the older portion of the Flower Market: the basements and office staircase and corridors are provided with electric light, which is also available for the offices.

Externally the building is carried out in red brick and Portland stone, similar to other and recent buildings at Covent Garden, and which is similar in general appearance to the red brick and terra cotta, of which the previous addition to the Flower Market was built 20 years ago.

An attempt has been made to express externally the various uses to which the building is being put, namely, the market on the ground floor, with its large semi-headed windows, similar in idea to the large arched windows on the ground floor of the older portion of the market; the existence of the angle staircase leading to the offices above is also emphasised in the elevation, the angle being carried up, as shown in our illustration, in the form of a tower containing the electric light machinery, easily accessible from the top floor.

As part of the scheme, the footpaths in Tavistock Street and Russell Street have been widened by throwing into the public way a considerable extent of space formerly occupied by private paving, railed area, etc.

The architects were Messrs. Lander, Bedells, and Crompton, of No. 6, John Street, Bedford Row, W.C., who recently erected the New Foreign Flower Market, and the builders were Messrs. Langdale, Hallett, and Co., of No. 70, Keppel Street, Chelsea, S.W.

COVENT GARDEN AT CHRISTMASTIDE.

In the early hours of the morning, when most people are asleep, Covent Garden Market is most active. And before most City men arrive at their offices the large hall, or "New Flower Market," is closed, immense quantities of plants and cut flowers having been disposed of during the early morning hours. The Grand Row, as it is called, is open during all the day, but the chief wholesale Flower Market closes at 9 a.m.

In almost all businesses there is an increased trade just before Christmas, but in none is there a more decided increase than in that of Covent Garden Market. Holly, Mistletoe, and evergreens of various sorts arrive in immense quantities. Many of these who send large wagon-loads by road sell the whole consignment to one buyer, who re-sells the same in smaller quantities. The consignments which arrive by rail are sold by commission agents. Christmas Trees in all sizes, from those about 18 inches high to large trees 12 to 15 feet high, are sold in very large quantities. It is hardly pleasant for the casual visitor to be about when the trade is in full swing, for he is quite likely to get his hat knocked off or his face brushed in an unpleasant manner by people carrying armfuls of evergreens. It is not only for the London trade that there is such a large increase, but vans from all the railway depôts collect for the provinces. In some instances produce is actually carried back close to where it was grown. All the commission men have a very busy time. Last week, on a cold, frosty morning, we noticed plants being packed for rail; in most instances they were protected, but some were observed on Charing Cross Station with scarcely any covering, and one could only wonder in what state they would reach their destination.

This, of course, is but one part of the business connected with the market. From all the suburbs vans arrive early, and many are loaded up, and start away again quite early. On an ordinary market morning the busiest time is from 6 to 7 a.m. At this time of year the market opens at five o'clock, and those who would like to see what Covent Garden Flower Market is like should get there at that time. During May and June it opens at 4 a.m., and from March until the end of July it is open for the sale of plants every morning, but not at such an early hour on bye-mornings. Tuesdays, Thursdays, and Saturdays are ordinary market days, and the others are termed bye-days. During the winter cut flowers only are sold on bye-days, and a portion of the market only is opened, so that those who have stands in the closed part have to occupy other stands. Since the newest addition has been made there are altogether 404 stands, and these are let at an annual rental of from £10 to £13 each, but extra tolls are charged for bye-days, porterage, &c. Although let at an annual rental, the authorities have the privilege of sub-letting any stands that are not actually occupied after a certain hour. There are many growers who have no regular stands. Some may come in at one time, and others at another season of the year. It is in the spring that there is the largest influx of what are termed "casuals." Since the last addition to the Flower Market several of these, though they only occupy the stands for a few weeks, have taken them permanently. It is just now that the additional accommodation is most appreciated, for many who had to stand in the open, exposed to all weathers, are now able to get under cover. Many who come in now occupy the stands which in spring are filled with bedding plants. In autumn there are many to bring cut flowers from the open ground, and at the present time there are those who grow hardy shrubs, climbers, &c. A good many stands are also filled with imported Palms, Draccenas, Aspidistras, &c. It may be difficult to procure just what is wanted sometimes, yet Covent Garden is the centre, where everyone looks for the best of everything that can be had in cut flowers, or plants for decoration, and for many choice plants it is the best mart. Though they are not always on sale, they can be procured through the grower's salesman, or the commission men, who have a wonderful knowledge of where to get almost everything known in horticulture.

Most plant growers have their own salesmen, while large quantities of cut blooms are sent to be sold on commission. Then there are the men who buy plants, &c., for sending away; this is an important branch of the trade. Almost anything grown can be procured through this agency, and often at lower prices than by buying direct from the growers.

History of the Market.

It appears that this important market originally started, like many large businesses, on very humble lines. The ground which is now covered with large buildings was originally the garden of a convent, hence the name "Covent Garden," and the produce was sold in the streets adjoining. After the disestablishment of the convent, huts were built where garden produce was sold, and gradually growing in importance, in 1835 some definite improvements were made, but it was not until 1872 that the first portion of the "New Flower Market" (as it is still called) was opened. Until that time flowers and plants were sold under considerable difficulties; yet the salesmen had advantages even then, for supplies were short, and instead of having to wait, they were often met on the road, and most of their produce bought before reaching the market.

Since the opening of the new market hall it has been found necessary to further increase the accommodation. The Jubilee Market, which was opened on a space west of the new market, was one step; this necessitated the removal of the house property in Tavistock Street, which provided a large open space. A portion of this was afterwards covered in by building the foreign flower market. This large hall stands above the ordinary market space, being built on pillars, on what is still known as the "Jubilee Market," and although a useful adjunct, it was found insufficient for the increasing trade, and the addition, shown in our illustration, opened early in the spring, which takes the corner of Wellington Street and Russell Street, is the last, and a most useful addition.

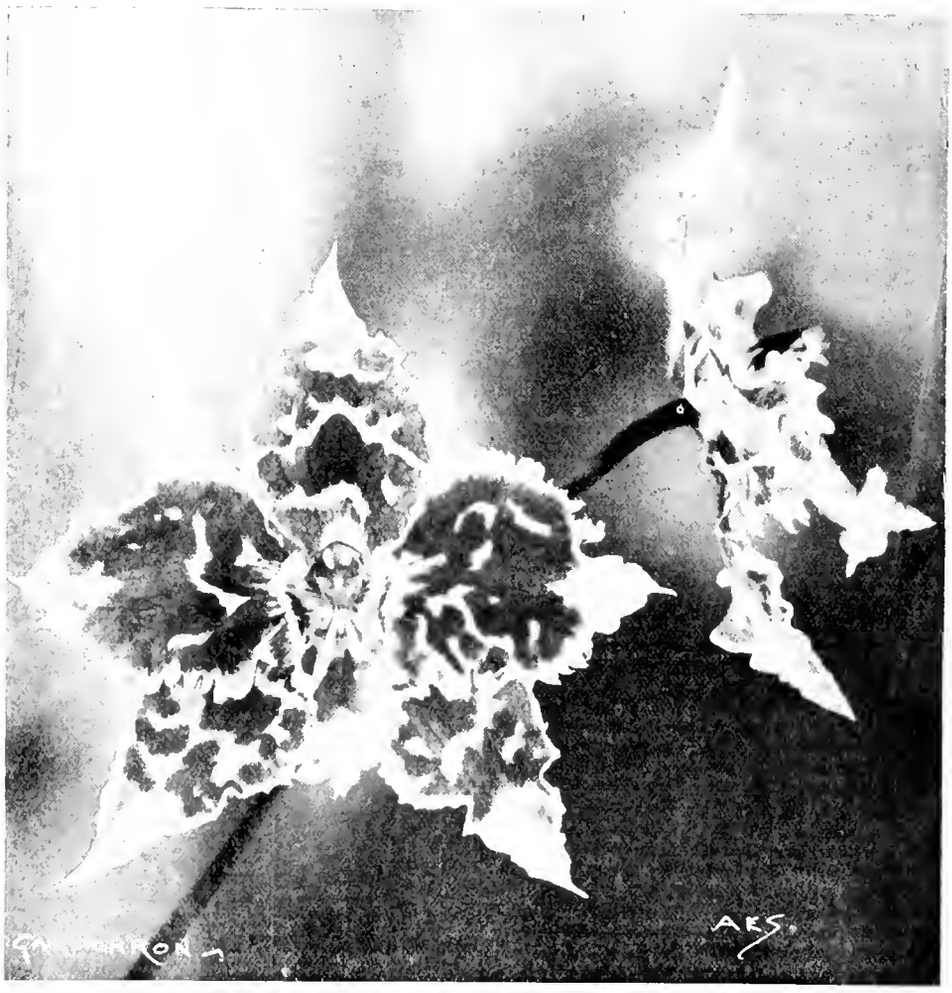
Seeing that Covent Garden Market first originated from a few women selling the produce of the garden in the streets, it is wonderful to see how it has developed. It is now the largest market in the world for flowers, fruit and vegetables, and, taking the management, it is surprising how well all the details are looked after. Mr. Asbee, the superintendent, is about early in the mornings, and, though he has an efficient staff, he has much to attend to himself, and has carried out these duties for over 25 years. He is respected by buyers, sellers, and all who come under his immediate control. It may be interesting to note that the market originated by the nuns selling the produce of their garden, and women have ever since been connected with the market. Women porteresses do nearly all the carrying out, and they are registered and wear a numbered badge. Their legal charge is 2d. for every parcel carried out to the vans, which stand in the adjacent streets. It would surprise many to see how easily many of these women take boxes of plants weighing upwards of a hundred weight on their heads and carry them long distances. There are many male porters employed, but their duties are to help unload all produce as it arrives, and to assist in keeping the gangways clear, &c. Altogether, quite a large staff of men and women get their living in one way or another. All are under supervision, and if there are any complaints they are suspended. The other morning Mr. Asbee asked one of the women to show her badge, and she apologised for not having the regulation apron on on account of it being a wet, dirty morning, but was able to show her badge, and allowed to pass on.

Outside Business.

Since the market has grown to such large proportions, several of the commission salesmen have large stores which are open pretty well all through the day, and some growers also have depôts which are open until after mid-day. It is generally considered to be rather trying work to attend the market, and there are some who do not last long, yet we meet others who have been regular attendants for over thirty years. Mr. Wermig, whose chief feature is hardy foliage and flowers grown in the open, states that he has not missed being at his stands any morning that the market has been open for over thirty years. Mr. T. W. Childs is another who has been attending for over thirty years. And Mr. S. Hills, who is considerably over seventy years of age, still sells his own produce. There are not many who attend the market who do not know Mrs. North. Her "stand" is outside the maket hall, and she supplies hardy foliage, moss, &c.

One of the most interesting personages amongst buyers is Mr. P. Garcia, who has a retail flower store in the grand row. He has been connected with the market for about fifty-four years, and his father and grandfather before him were also in the business, dating back for over a century. Mr. Garcia has a knowledge of the time when most of the business was done in small wooden huts, and much other valuable information concerning the progress of the largest fruit, vegetable and flower market in the world can be obtained from this gentleman.

Although, strictly speaking, it is a wholesale market, all sorts and conditions of people may be met there, especially at Christmas time and other festive seasons. On Saturday morning, December 22, the market will be invaded by nurses, ladies connected with churches of all denominations, clergymen, and many housewives and others anxious to get as many flowers as possible for a small outlay. At one time salesmen would not sell to any except to members of the trade unless high prices were paid, but since the supplies have been so plentiful there are but few who are not willing to take money from anyone who comes along.



(*From a photograph.*)

FIG. 155. ODONTOGLOSSUM CRISPUM "JEAN LINDEN": FLOWER WHITE, WITH REDDISH-BROWN COLOURED BLOTCHES.

(For text see page 419.)

PLANT PORTRAITS.

CLEMATIS LADY NORTHCLIFFE.—One of the Jackmanii type; flowers purple.—*Garden*, December 8.

CLEMATIS MONTANA RUBENS.—*Le Jardin*, December 5.

CRINUM LAURENTII, Durand and De Wildeman.—*Tribune Horticole*, December 1. A new species from the Congo. Flowers pure white.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUMS FROM BRUSSELS.

AT figs. 155 and 156 are illustrated two richly-spotted varieties of Odontoglossum crispum shown at the R.H.S. meeting on December 11 by Messrs. Linden, Brussels. O. "Jean Linden" is said to be from a cross between O. crispum Lindeni and O. c. primatus, whilst O. "Madame Linden" was obtained from a cross between O. crispum "Queen Emma" and O. c. Prince Albert. The larger flower is "Jean Linden," and it has more white in it. The illustrations are from photographs supplied by Messrs. Linden, and they represent the flowers at about their natural size.

CYMBIDIUMS FROM GLASNEVIN.

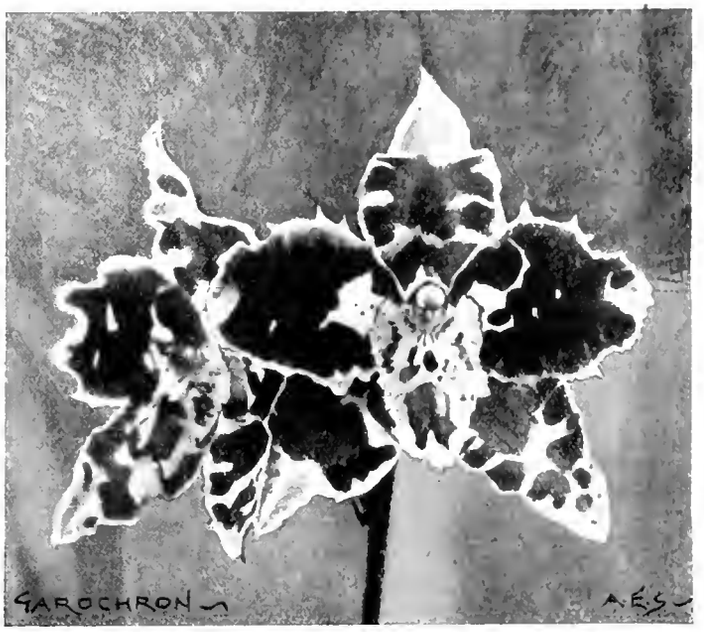
FROM the Royal Botanic Gardens, Glasnevin, Dublin, the Curator sends spikes of several handsome Cymbidiums, calling attention to the great variation in C. giganteum, three varieties of which are sent. The No. 2 is a remarkably beautiful variety, the marking on the sepals and petals being bright purplish-red, and the blotching on the lip of a similar colour, the upper side of the column being of dark claret colour. A fine form of C. Tracyanum has delightfully fragrant flowers; and an inflorescence of C. elegans has a dense head of primrose-coloured flowers with an orange-coloured blotch on the lip, and is much larger than the ordinary form. This species, although originally named Cymbidium elegans by Lindley, was the subject of the new generic title Cyperorchis, Blume, the narrower connivent segments and some other minor characters being considered distinguishing features. To Cyperorchis elegans were added C. Mastersii and C. cochleare. The hybridist, however, crossed the two sections, and in Cymbidium Lowio-Mastersii and C. Ballianum (eburneum × Mastersii) they merge. The Orchid Committee of the Royal Horticultural Society therefore include all the Cyperorchis and their hybrids under Cymbidium.

MORMODES BADIUM.

THIS fine species, which was originally described from the Hon. Walter Rothschild's specimen, is again in flower at Tring Park, Tring (gr. Mr A. Dye), where its clear yellow-coloured variety has also recently bloomed. The plant has a stout ascending inflorescence bearing eleven showy flowers with powerful aromatic odour. The sepals and petals are of a glowing red and the broadly-expanded labellum bright claret purple. The plant has the same singular provision for ejecting the pollinia as the Catasetums, and on the cirrhus being touched they invariably spring out in the same direction. It seems near to Mormodes igneum, which is very variable in colour.

DOUBLE FLOWER OF ODONTOGLOSSUM CRISPUM.

MESSRS. J. & A. McBEAN, of Cooksbridge, send us a spike in which all the flowers are more or less double. The three sepals and the three petals are normal or nearly so, but the column is broken up into its constituent parts, some generally retaining their usual conformation whilst the others are petaloid. We published an illustration of a similar deviation in our volume for 1872, p. 538.



(From a photograph.)

FIG. 156.—ODONTOGLOSSUM CRISPUM "MADAME LINDEN": FLOWERS WHITE, WITH CLARET-COLOURED BLOTCHES.

CYPRIPEDIUM INSIGNE TWO-FLOWERED STATE.

MR. W. C. UPHILL sends us a flower stalk of C. insigne with two flowers. This condition is not very unusual, but is always interesting, especially when the flowers are, as in this case, of good form and size.

BANANAS *v.* ORANGES.

THE frequent recurrence of exhibitions of Colonial fruits at the Royal Horticultural Society is no doubt one of the causes of the diffusion of a more general knowledge of these fruits amongst English consumers, and a consequent increase in their consumption. This is markedly the case with the ever favourite Orange and the now popular Banana, the consumption of which has for the last two or three years been increasing by leaps and bounds, so much so that with the extension of cultivation there is every prospect of its overtaking the Orange; and this for several reasons, notably that the Banana is obtainable for a great part of the whole year, and even in its dearest season is a cheap fruit, and further that its nutritive value seems to have become already appreciated by all classes.

That the juicy, refreshing Orange will ever be supplanted by the Banana is not to be expected or even hoped for, but that the two will run side by side is very clearly evidenced by a careful watching of the fruit trade and a comparison of imports. The omission of the golden-skinned Orange from the Christmas dessert fruits would be the removal of one of the traditional symbols which makes Christmas what it is to so many old-fashioned people, and a joy to the younger ones. Besides, the fruit supply, whether British, Colonial, or foreign, is one that we cannot afford to diminish. It is now fully acknowledged that the general consumption of fruit is a thing to be encouraged, and one that has much increased of late years, a fact which is confirmed by a note in the *Agricultural News* of Barbados, which the West Indian mail brings us at the moment of writing. Referring there to the annual report of the Collector-General in Jamaica, for the year ending March 31 last, on the Banana industry, the writer says: "The consumption of fruit throughout the world at the present time has enormously increased. This, no doubt, is due to the teaching of the advanced schools of dietetics, and in the list of fruits most in demand it is safe to say that the Banana takes the most prominent place." It is further stated that during the last fiscal year the outturn of the United Fruit Company of Jamaica amounted to 30,000,000 bunches, against 21,000,000 in the previous year. The principal markets to which Bananas were sent were the United States of America, 8,192,970 bunches in 1904-5, which had increased in 1905-6 to 13,763,363 bunches; and to the United Kingdom in 1904-5, 694,952 bunches, and in 1905-6, 1,217,901 bunches. With smaller quantities to Canada and other countries not enumerated, the totals were made up to 8,903,739 bunches in 1904-5, and 14,981,135 bunches in 1905-6. In the same journal the following notes occur on the Jamaica Orange industry: "It has often been said that the Jamaica Orange is the finest in the world. This may or may not be true, but the fact remains that Jamaica is capable of supplying Oranges that need fear no competition. There is, however, a 'but' that bars the entrance into the privilege that should belong to the island, and this barrier can only be removed by the people interested in the industry." Attention is then drawn to the practice of immature picking and bad packing, and the writer concludes with the following remarks: "There is a great possibility in the industry; it is an asset of great value to the people, but is subject to keen competition, and can only come to a full development by being most jealously safeguarded, and by the adoption of the most intelligent methods of marketing.' It is interesting to note in connection with the competition between Bananas and Oranges that the exportation of Jamaica Oranges during the same period as that already referred to in the case of Bananas showed a considerable increase in the quantities sent to the United Kingdom and a decrease in the amount sent to the United States of America; thus the number of Oranges exported to the mother country amounted in 1904-5 to 18,683,600, and in 1905-6 to 21,040,730; while the number to the United States shows a falling off from 47,441,518 in 1904-5 to 44,801,671 in 1905-6, the total number of Oranges exported to all countries in 1905-6 being 74,503,351, against 73,053,108 in the previous year.

Adverting more particularly to the present condition and future prospects of the Banana supply to this country, the time seems to have arrived when the public verdict has decided that the Banana has "come to stay," and that in future its attention will be given to the selection of the best varieties, namely, those possessing the finest and most delicate flavour. In this the Canary Islands fruit has hitherto had the foremost position, the Costa Rica and Jamaica fruit being less mellow and without the distinct flavour of the former. The individual fruits of the Canary Islands variety

are also smaller and have much thinner skins. It is this variety, namely, the produce of Musa Cavendishii, that has been cultivated so successfully during the last two or three years in Barbados, and to which especial attention has been drawn by the Imperial Department of Agriculture.

The manner of shipping this fruit is different from that adopted in the case of that from Jamaica, which arrives in "naked" or unpacked bunches, while that from Barbados is always packed in open hexagonal crates, that are now beginning to be so familiar at the principal centres of the fruit trade. In these crates the fruit bunch is first wrapped in soft paper and cotton wool, and the crate fitted up with Banana "trash," namely, the dried leaves, which prevents the bunch from shifting, but at the same time affords a springy bed for it to lie in. An interesting fact worth recording, as it now no longer exists, is that at the commencement of this trade all the Barbados Bananas brought to this country were brought by the Royal Mail Steam Packet Company's boats, and were landed at Plymouth, being lifted from the hold of the vessel, which anchored at the breakwater, in large waterproof sheets by cranes and lowered into lighters sent out to meet the mail boat. In this way a cargo, often of some 2,000 crates, would be discharged in the course of an hour, and it was a busy scene that ceased about a year ago, when the steamers ceased calling at Plymouth, and now discharge their cargo on the quay in a more matter-of-fact way at Southampton. The extension of the cultivation of this form of Banana in Barbados is a thing hoped for and anticipated, and there seems to be a prospect of its cultivation also in some of the smaller islands of the British West Indies, which, if successful, will bring one of the products of our own colonies into competition with that of the Canary Islands, the returns of which, according to the official "Statement of the Trade and Navigation of the United Kingdom" for 1905, showed that from those islands alone as many as 2,451,966 bunches of the value of £1,022,259 were landed on our shores. *John R. Jackson, Claremont, Lympstone, Devon. Dec.* 12, 1906.

NOTICES OF BOOKS.

PICTORIAL PRACTICAL POTATO-GROWING. By W. P. Wright & E. J. Castle (Messrs. Cassell & Co.)

The authors start with a brief historical account of the Potato. Oddly enough they make no mention of the exceeding importance to European Potatos of the introduction during the seventies of many new, remarkably productive, and sturdy varieties from the United States. Not only were these in time found in every garden in the kingdom—some such as Early Rose, Beauty of Hebron, Early Puritan and White Elephant being still in wide cultivation—but these Americans were afterwards intercrossed with British varieties, and the fine ones of to-day are primarily the result of the Anglo-American breeding, a fact some have forgotten and others never learned. Evidently the real history of the Potato in Europe has yet to be written. The question of "Potato Deterioration" forms the subject of a chapter, whilst the authors seek to show that deterioration is with the Potato an inevitable product of the tuber method of propagation. Not enough stress is laid on the fact that in myriads of cases stock of seed, cuttings, or other raised plants die out not because they deteriorate but solely because they are elbowed out by new and better varieties. The fact that the Ashleaf Kidney remains as good as ever is due to the fact that nothing in the entry of early Potatos has yet displaced it in gardeners' esteem. When dealing with the very important question of "Change of Seed" we are on common ground. A change, especially from strong land to light land, was a part of a grower's practice 50 years ago. Now that we have had wider experience of the actual and results following from the planting of Scotch raised tubers in the better soils of the north, the subject has been doubly emphasised, and even Ireland too is showing us that in more humid climates Potatos obtain a remarkable reproductive power such as cannot be found in the over-ripening soils of the south of England.

It is still amusing to read that expert opinion is, however, in favour of acclimatising Scotch "seed" somewhat by giving it one year's growth in Lincolnshire, especially when intended for the southern counties, as the change from north to extreme south is too drastic, whilst the expert opinion referred to may be that of the Lincolnshire growers. Southern growers, who have been importing seed tubers direct from Scotland to the south, will indeed smile. The suggestion is as amusing as it is inexact.

The particulars given under the heading of "Cross Fertilisation" are very detailed, and many raisers will doubtless read and marvel. We are told that seed Apples (berries) must be put away to decay, then have the seeds washed out from the pulp through a sieve to separate them from the pulp. If seed Apples (berries) be put away for the winter in a small box and in a dry place they will dry and shrivel up, leaving nothing but the seeds and skin to rub up and sow. Over myriads of breadths of Potatos in bloom at one time, scarcely a single berry is, a few weeks later, to be found. The inference is obvious, either that the pollen is not carried by the wind or insects, or that very little is formed to carry.

Propagation by means of cuttings, and cut and whole sets, with numerous illustrations, furnish some of the most interesting reading in the book, although these methods have been placed in detail before the public for many years. Then follow instructions with many, and some rather odd, illustrations as to the preparation of the soil, by means of the plough, spade, and fork. Much of the instruction seems very elementary in light of the fact that thousands of growers, large and small, have been doing all that is advised for many years. Sprouting sets, planting, earthing, lifting, and storing, all relating to very practical subjects, are well described, and even the best methods of marketing tubers are not overlooked. The various insect pests which affect Potatos, happily not serious enemies, and the far more troublesome

(Photo by H. F., Macmillan.)

FIG. 157.—"TAPPING" PARA RUBBER BY THE HERRING-BONE METHOD.

(For text see page 421.)

fungoid diseases and remedies have full consideration. Even the preparation of tubers for exhibition is not overlooked, neither is the culinary aspect of the Potato omitted. Neat as is the text the illustrations seem hardly to do justice to the book. It is, however, cheap, and if read by those who have some practical knowledge of the Potato they may find interest in it, even if no additional knowledge be gained.

THE SCOTS GARD'NER. By John Reid. Edited by Alfred H. Hyatt, with appreciation by the Earl of Rosebery. (T. N. Foulis, London and Edinburgh, 1907. Price 2s. 6d.)

This is a daintily-got-up little volume, the pages of which purport to "stand as originally written," a few "grammatical errors" only being remedied. It is published as a transcript of the 1683 edition, and, to a large extent, it bears out that character, but there are unfortunate and, as we think, gratuitous interpolations from a later edition which sometimes, as on page 8, give a distorted view of Reid's meaning. This is largely or, perhaps, altogether due to the "Eminent Hand" who improved the second edition, mistaking the meaning of the words "confined" and "immediately" which Reid used respectively as "restrained" or "restricted" and "nothing intervening," and the passage has been altered to suit the usual meaning of these words. Reid's "red Pear Achans," in a similar manner, is altered to "red Pear, Achans." Happily the text of Part 2, the Appendix, and Kalender are not largely altered, but in a rare work of this kind, which must ever remain invaluable as giving the earliest presentation of gardening in Scotland, as well as for the merit of the work intrinsically, it is a pity the editor did not see his way to let the original text stand, and give such explanations as he thought needful towards its elucidation. Notwithstanding these, which we cannot help considering serious faults, this edition of *The Scots Gard'ner* will be welcomed by those interested in the gardening of bygone times, as well as by readers who are attracted by the quaint in literature.

COLONIAL NOTES.

GERBERA JAMESONII.

IN reference to the communication which appeared in your columns on October 27th, I may say that it is quite erroneous to state that Gerbera Jamesonii occurs only in the Kaap Valley. It is common at various points all along the eastern slope of the Drakensberg Range, at an altitude of about 2,000 to 2,500 feet. I have found it in great quantity on the Government Tobacco Estate in the Zoutpansberg district, about 150 miles north of Barberton, and have heard of its occurrence in plenty in the Middelburg district.

I have seen plants bearing flowers of the various colours referred to by Mr. Graham-Lawrance, which are not of infrequent occurrence, though not common. There is also considerable variation in the tints of red displayed by different plants.

The "Barberton Daisy," as it is called in the Transvaal, grows luxuriantly in Pretoria gardens (altitude 4,500 feet), withstanding several degrees of frost and forming handsome clumps of dark-green foliage.

During the last three dry years it has been rather unusual to find fertile seed on either wild or cultivated plants, but this year my plants are bearing more fertile seed, perhaps on account of the better rainfall, or perhaps because the plants are older. *Jos. Burtt-Davy, Agrostologist and Botanist, Pretoria.*

(Photo by H. F. Macmillan.)

FIG. 158.—A PRETTY VIEW IN THE ROYAL BOTANICAL GARDENS, PERADENIYA, SHOWING THE TROPICAL CHARACTER OF THE VEGETATION.

THE FIRST RUBBER EXHIBITION.

CEYLON has long been known as the "Island of Spices," and

> Confessed the best and brightest gem
> In Britain's orient diadem.

In more recent years it has become noted for the production of coffee, quinine, tea, and other tropical products, but just recently it has led the way in an entirely new agricultural industry, viz., the growth and production of plantation rubber. The Rubber Exhibition was characterise by two unique circumstances—it was the first of its kind in the world, and its venue was the famous Royal Botanical Gardens at Peradeniya. The exhibition is thus practically the christening of the new industry which here had its recent birth, at least as regards the Eastern tropics. Thirty years ago the first young plants of the Brazilian or "Para rubber" tree (Hevea brasiliensis) were introduced and established here, though the general cultivation of this tree for rubber did not attract the attention of planters until about 20 years later. Nor did the prices then ruling for raw rubber, with the scanty knowledge of its growth and preparation, encourage investment in its cultivation. With, however, the development of the trade in cycles and motor vehicles the price of rubber, especially the fine plantation article, rose rapidly, and with this began the exploitation of the tropics for land likely to be suited for the growth of rubber-producing trees. A curious fact is that it is now almost impossible to procure seed in any quantity of this useful Brazilian tree in its native country, owing partly to the ruthless methods which have been adopted there for obtaining the rubber from the trees. The tropical world now looks to Ceylon for rubber seed as well as for information on rubber cultivation.

WHAT IS RUBBER?

To this question the average person in temperate climes could give but the vaguest answer, notwithstanding that the substance is now so largely and universally employed in the manufacture of tyres and other articles. In various compounds, chiefly with sulphur, it is known as vulcanised rubber, the proportion of sulphur varying according to the degree of hardness desired. Crude rubber, it may be mentioned, was first brought to Europe in 1735, and in 1770 its value for erasing pencil marks was made known. Its next important use was discovered early in the nineteenth century, by Charles Macintosh, who employed it in the form of varnish for waterproofing cloth, which has been called after the inventor's name. The industrial uses of rubber may, however, be said to date from 1839, when the important process of vulcanising was discovered. Now it is almost impossible to mention a use which rubber does not serve in some form or other, from the makers of street-paving to the manufacture of tooth-brushes, its latest application, perhaps, being in America the replacement of broken ribs in human beings. Technically known as "Caoutchouc," crude rubber is obtained from the milk or "latex" of certain species of trees, and sometimes shrubs or climbers (belonging chiefly to the three natural orders, Euphorbiaceæ, Urticaceæ, and Apocynaceæ) inhabiting the forests of tropical regions. This milk is analogous to cow's milk, which in appearance it much resembles. It is obtained (on plantations) by a process of tapping, which consists of incisions made in the bark, these being somewhat varied to suit local conditions, and the particular tree cultivated. The illustration at fig. 157 shows tapping by the herring-bone method. Stuck in the bark at the top of the cuts are drip-tins containing water, which, dripping slowly on the cut surface, encourages a free flow of latex. With each tapping a shaving of bark is taken off the lower surface of the cut, which in course of time becomes several inches wide, as shown in the illustration. The milk or latex trickles from the newly-made cuts, and is collected, according to the method of tapping adopted, either into small tin cups stuck in the bark at the base of the cuts, or in basins placed at the foot of the tree. The milk ceasing to flow in 10 to 15 minutes (being more abundant in the morning and in the evening and in wet weather), it is emptied into pails or other

vessels and conveyed to the factory. Here it coagulates or curdles by exposure, but the process is usually hastened by adding to it, after it is freed from impurities, a few drops of acetic or other acid; rennet has been found to produce the effect of curdling it, as it does cow's milk. The rubber or caoutchouc thus forms in a soft floating mass, which is then well washed with water, and afterwards pressed into marketable forms and dried for export. This vegetable milk must not be confused with the watery sap, from which it is different both in substance and function; unlike the sap, its extraction does not materially affect the welfare of the tree—a fortunate fact for the cultivator. Rubber trees may be tapped when from six to eight years old, and on an average from ¾ lb. to 3 lb. of dry rubber per tree a year may be obtained, according to age and development. In recent years rubber cultivation as an investment has attracted considerable interest. This is not surprising considering that the product can at present be sold in London at a clear profit of four shillings or more a pound, yielding about £130 to £150 per acre after deducting all costs. It is estimated that the area under Rubber cultivation of different ages in Ceylon is upwards of 100,000 acres.

THE EXHIBITS.

These were worthy of the important occasion, and, as might be expected, represented products from widely separated regions of the tropics. One enterprising London firm showed samples of rubber from the Congo, Uganda, Mozambique, West Coast of Africa, Madagascar, South and Central America, Assam, Rangoon, Penang, Borneo, &c. But Ceylon and the Straits Settlements contributed the bulk of the exhibits, which in their various forms made a most interesting show, though perhaps not equally attractive on account of beauty or fragrance. All one side of a wing, about 85 feet in length, was occupied with rubber "biscuits," which looked like brown or amber-coloured pancakes. This has hitherto been the most popular form for making up plantation rubber, but it is now being discontinued in favour of "crepe," "sheet," and "block" rubber, which effect economy in freight and other advantages. A number of other rubber forms, as "lace," "flake," "scrap," &c., were also exhibited, either singly or in collections. It is well to explain that this has reference almost exclusively to the product of Hevea brasiliensis, known as "Para rubber," which is *the* rubber tree of the day. Small lots, however, of the products of Ficus elastica (Ramong rubber), Castilloa elastica (Panama or Central American rubber), and Manihot Glaziovii (Ceara rubber) were also displayed. An idea of the extent of the exhibits may be gathered from the fact that the judging of rubber alone, which was done by four experts from London, occupied three days. Appliances for tapping, &c., covered a considerable area, and the machinery section included different machines for treating rubber in the initial stages of preparation.

The utilitarian aspect of the exhibition was by no means neglected by the promoters, for the elaborate programme included a series of lectures by scientists and experts on subjects connected with rubber, one such lecture at least being delivered each day in one of the pavilions. Appropriately led by the Director of the Premier Gardens and foster-mother of the rubber industry in the East (Peradeniya), here were divulged and discussed the latest discoveries made on the subject by the science of the botanist and chemist or by the knowledge and ingenuity of the planter and engineer. In contrast to the usual principle of an exhibition, the objects in this case were entirely *pro bono publico*, *i.e.*, the financial part had no serious consideration. The necessary funds were supplied from the public revenue, and an immediate return was not, of course, to be looked for; but one would begrudge the expenditure against the undoubted far-reaching effects. Hitherto it was felt that rubber-growers were working a good deal in the dark, being either unaware of, or unable to obtain, the latest facts and information concerning the planting and growth of the trees, the collection of the latex and its preparation for market in the best paying forms. To such the Rubber Exhibition must have been an education beyond the dreams of the most optimistic.

But for the astrologer, the natives agree that the whole work connected with the exhibition would not have been so successfully and quickly accomplished. As in all important operations here, this official was of course consulted, and asked to divine the lucky day and hour to start work. Accordingly twenty minutes past nine on the morning of a Tuesday, the signal for starting was conveyed by the worthy chief, Mr Dunnville, who, as prescribed by ceremony and tradition, was dressed in white, facing the east, having previously partaken of rice boiled in milk (not water). From that moment the workmen laboured as at a labour of love, faithfully trusting to the wisdom and foresight of the weather prophet, who himself worked as one of them. As no large gang of native workmen is ever complete without at least one doctor or "rederala" (who cures chiefly by the invocation of Buddha and the stars) the present occasion has not, of course, been an exception to the rule.

Regarding the Peradeniya Gardens, often compared by travellers to the "Garden of Eden," they are entitled to at least a few remarks. These date their origin back to the beginning of the nineteenth century, the site having been originally a royal demesne of the Kandyan kings. Though their progress as a botanical institution has been more or less interrupted until about a decade ago, they have long been famous for their peculiar natural beauty, constituted by their favoured position, undulated contour, and wealth and grandeur of vegetation. The area is about 150 acres, mostly surrounded by the river "Mahaweliganga" (great sandy river), and the average elevation above sea level is approximately 1,600 feet. The climate is hot, moist, and very equable, the mean annual temperature being about 75 Fahr. The vegetation is, as might be expected, purely tropical, being characterised by an abundance of climbing plants, Palms, Screw-pines, epiphytic Orchids, and Ferns. A special feature is the majestic Giant-bamboo, monarch of the grass family, growing in large dense clumps and reaching a height of 120 feet or more, of which a large illustration was given in our columns in issue for September 10, 1892. The general character of the vegetation is, of course, eminently distinct from that of temperate climes, chiefly by the abundance of aerial or buttressed roots of trees, whose fruits are often of immense proportions, and, by a provision of Nature, borne on the trunk and stouter branches. The leaves are generally large and leathery, and the flowers brilliant and considerable in size. Amongst the most striking views in the gardens are the avenue of Talipot Palms (Corypha umbraculifera), deservedly known as the "Giant of Palms," the main central drive, the flower garden, the Fernery and Palmyra avenue, the extensive "Great lawn," and the "Great circle." The latter is a flat, circular area of lawn surrounded by some magnificent trees, and with a handsome group of Palms in the centre; in a somewhat altered form, mostly covered by buildings and illuminated by electric light, this formed the site of the recent exhibition. Individual objects of much interest are numerous, amongst those which especially attract the attention of visitors being the "Candle-tree," whose hanging fruits closely resemble candles in size and appearance; also the "Cannon-ball tree" (a name suggested by the large globular brown fruits), and the "Traveller's tree." The various spices are a never-failing source of interest, and a very complete collection of these may be seen here, including nutmeg, clove, cinnamon, allspice, ginger, vanilla, cardamon, and others. Equipment for scientific research here is now very complete, with laboratories, a large library, herbarium, &c., and a new commodious museum and herbarium building is being erected. About ten years ago, with the appointment of a new director, Dr. Willis, from the University of Cambridge, the scope and staff of the Botanic Department of Ceylon have been very considerably extended; and the Peradeniya Gardens have been greatly transformed and improved in many features. *H. F. Macmillan, F.L.S.*

CHRYSANTHEMUM NOTES.

POPULAR CHRYSANTHEMUMS IN FRANCE.

ONE of the great differences between an English Chrysanthemum show and a French one is the greater number of varieties shown by the French exhibitors. At the recent Paris show there were scores of varieties long since discarded by English exhibitors, but which are, nevertheless, usefully retained by French growers for decorative purposes in their groups. Others freely used in France have never yet found favour in England. F. S. Vallis is certainly one of the most popular varieties with the French, and I have this season seen some enormous Blooms of it. Lt.-Col. Ducroiset is another to which these remarks apply; and President Viger, Mme. Paolo Radaelli, Mme. Geo. Rivol, Mrs. Coomber, Mrs. Barkley, Sapho, Le Peyrou, Sensation, President Loubet, Mme Gustave Henry, and W. R. Church were in nearly all the important exhibits of cut blooms.

In the plant classes Tokio, a pale pink, stiff-petalled Japanese variety, is frequently used, and is very effective. Mme. Lem Bowen, a golden-bronze, incurving flower, of deep build is certainly a useful kind. Duchesse d'Orleans, a white Incurved, is grown in enormous quantities for the Paris florists' shops, and is, in addition, a favourite with exhibitors of pot plants. Mme. Ant. Marmontel is fine in colour, being bright rosy-mauve, with a good floret. It is very fine when grown as specimen plants, and as such is largely exhibited. Vierge Montbrunoisi, a big white, and Souvenir de Lombez, golden-bronze, are both frequently met with as pot plants. Papa Bie, a curious, dull, reddish-crimson variety, is useful for exhibiting in groups. For furnishing decorative dwarf groups Baron de Vinols, a medium-sized Japanese, of bright rosy-amaranth, can hardly be surpassed, and almost everybody at the Paris show uses it. Hortus Tolosanus, a fine reddish-terra-cotta, with gold reverse, makes a good specimen plant. *C. H. P.*

SCOTCH GARDENERS IN AMERICA.

(*Continued from page 382.*)

W. D. BRECKENRIDGE was born near Ayr in 1810. He was head gardener for Dr. Mell, of Edinburgh, for four years, after which he accepted a position at the Botanical Garden in Berlin. In 1837 he landed in Philadelphia, and became foreman for Robert Buist. The year following his arrival the Wilkes Exploring Expedition was about to start, and Mr. Breckenridge was selected as botanist of the expedition, which lasted four years. He made many collections of plants and seeds, some of which laid the foundation of the National Botanic Garden at Washington, D.C. On his return he was made superintendent of the garden, succeeding Charles Downing, and in that capacity accomplished a great deal of work around the parks of that city. An exhaustive work written by him, embracing a description of the Ferns and Mosses collected on the cruise, was published by the Government. After resigning his position at Washington he entered the nursery business at Govanstown, Md., which he conducted until his death on February 3, 1893.

JAMES LITTLEJOHN, a native of Crieff, where he was born in 1818, was apprenticed at Blair Drummond, Perthshire, and was an old Kewite. He was one of the pioneer growers at Madison, New Jersey, a section famous for its fine Roses, Littlejohn's Magna Charta being the best that came into the New York market. He died in 1893.

ROBERT MCCRON was born in Kilmarnock in 1820, and died October 28, 1892. He came to America when eleven years of age, became an expert carpet weaver, then a grower of vegetables, afterwards a florist. He was a successful cultivator of Stocks. He received scanty education in his early life, but studied books while at work, and attended evening school. During slavery days he conducted what was known as an "underground" railway, and many a fleeing slave he helped over the lines to a place of safety. His funeral services were conducted by a coloured preacher.

PETER HENDERSON.—It can, I think, be safely said that among modern horticulturists in America no man was better or more favourably known than Peter Henderson. His name was familiar in every State in the Union from Maine to California. Peter Henderson was born in Pathhead, near Edinburgh, June 9, 1822, and died at his home in Jersey City, N.J., January 17, 1890. At sixteen years of age he was indentured as an apprentice in the gardens at Melville Castle, near Dalkeith, where George Sterling was head gardener. While serving his apprenticeship Mr. Henderson competed for and won the medal offered by the Royal Botanical Society of Edinburgh for the best herbarium of native and exotic plants, the competition being open to Great Britain. He came to America in 1843, and began work in the nurseries of George Thorburn, Astoria, L.I., and afterwards with Robert Buist, of Philadelphia. Subsequently he was gardener for Mr. Charles F. Spang, Pittsburg, Pa., and it was while in the latter capacity that Mr. Henderson became so discouraged that he resolved to enter the Army to serve during the Mexican War. Fortunately, he was dissuaded from his purpose. With his brother James, he first engaged in commercial vegetable growing in Jersey City, subsequently turning his attention to the cultivation of plants and flowers, and latterly to the seed business. He laid the foundation for, and till his death assisted in building up, what is probably the largest business of its kind in the United States. As a catalogue maker and advertiser Peter Henderson had few, if any, equals. He was a prolific writer, and his books and other contributions to horticultural literature have, perhaps, done more for the advancement of gardening in America than any other known factor. Among his best-known works, all written in a popular, practical style, are *Gardening for Profit*, *Practical Floriculture*, *Gardening for Pleasure*, *Garden and Farm Topics*, Henderson's *Handbook of Plants*, and *How the Farm Pays*, the latter written in conjunction with William Crozier, and being a stenographic record of Mr. Henderson's questions and Mr. Crozier's responses. It would occupy too much space to tell of all Mr. Henderson's achievements to horticulture, of the plants he introduced into commerce, of his own charming personality, and the great interest he took in every Scotch gardener who sought his advice. A most interesting account of his progressive career is given in a "Memoir," written by his son Afred, now deceased. From the tribute to his memory paid by a fellow-countryman, A. D. Cowan, in a paper read before the New York Florists' Club, I quote as follows:—"No one but he handled the pioneer's pen which brought the dark, selfish and ignorant methods of the old school of horticulture into daylight; and to Peter Henderson will belong for generations to come the credit of popularising, improving, and developing gardening in these United States."

The business is continued under the former title of Peter Henderson and Company, a son, Charles, being president of the concern.

WILLIAM SAUNDERS.—Of the many names of Scotsmen emblazoned on the pages of American horticulture few stand out more prominently than that of the late William Saunders, of the Propagating Gardens, Department of Agriculture, Washington, D.C. He was born at St. Andrew's in 1822, his parents originally intending him for the Church, his own tastes leaning to gardening. Among his best-known landscape gardening achievements are Clifton Park, Baltimore, Md.: the designing of Fairmount Park, Philadelphia; and the national cemetery grounds at Gettysburg. In 1862 he was appointed superintendent of experimental gardens and grounds at Washington. Through his direct instrumentality nearly all of the tropical fruits have been introduced into the United States, one of the most valuable being the seedless or navel Orange, which he received from Brazil in 1867. He was the originator of the Patrons of Husbandry, and rendered valuable service to the city of Washington as a member of the Parking Commission. Mr. Saunders was a prolific contributor to the technical Press. His knowledge of plants from an economic standpoint was an extensive one, and his ability as a landscape gardener was universally recognised. The beautiful grounds of the Department of Agriculture are an enduring monument to his skill.

WM. FOWLER was born near Glasgow in 1822, and served his apprenticeship at the Glasgow Botanical Gardens. He was appointed by the British Government to collect specimens in Australia. For over 40 years he was gardener at John Hopkins Estate, Baltimore, Md., and laid out the plans for a botanical garden in connection with the university which bears the name of his employer, but through the latter's death the scheme fell through. Fowler was extremely fond of New Holland plants, an excellent collection of which he gathered together for Clifton Park greenhouse, Baltimore. He died in 1897.

ROBERT HALLIDAY, of Baltimore, Md., whose father was born at Dumfries, Scotland, was an expert grower of Azaleas and Camellias, and wrote a book on each of his specialties. He died in 1894.

WILLIAM ELLIOTT (1824-1897), a native of Crailing, near Jedburgh, was, during his lifetime, one of the best-known seedsmen in New York City. He served an apprenticeship in the Earl of Minto's gardens, afterwards working on several places in England. He came to this country in 1851. Three years later he opened a seed store in New York, and in 1858 inaugurated the plant auction business. On the latter rostrum Mr. Elliott had few equals. His dry, pawky, Scotch humor never failed to keep things moving, nor was he backward at times in the employment of biting sarcasm. He was nevertheless a most genial wholesouled fellow, well liked by hosts of friends, several of whom were, on social occasions, more than once the butt of his banter. A good story is told where Peter Henderson one time turned the tables on Elliott. At a dinner of the New York Horticultural Society the auctioneer had been having some fun at Henderson's expense. Peter "tholed" it right through, and then his turn came to speak. He said a Scotch gardener, not long over, had called in at the store one day looking for a job. He was informed there was nothing on the books just then, and Mr. Henderson advised him to try Elliott's, across the way.

"Elliott?" queried the gardener. "Is he a richt?"

"Certainly he's all right," said Mr. Henderson. "Go over and see him."

The knight of the spade hesitated a moment, then volunteered the explanation of his hesitancy in this wise: "The reason I speer at you is because whaur I cam' frae a the Elliotts were tinklers."

The laugh was now on the other fellow.

The seed and auction businesses are continued by Mr. Elliott's sons, William J. and Carl.

T. B. MCLUNIE (1826-1903) was born in Dumfries. In his youth he served as a page to Thomas Carlyle. He was a practical landscape gardener, and laid out the grounds around some of the State Buildings at the Philadelphia Centennial Exposition in 1876. He also was at one time engaged in engineering work on the Panama Canal.

JOHN SCOLLAY.—In the greenhouse engineering line the name of the late John A. Scollay, of Brooklyn, N.Y., holds a prominent place. He was born in Dundee in 1827. Among his inventions are the Scollay Invincible boiler, rubber plant sprinkler, automatic air valve, rubber putty bulb, and a patent thermometer. The business he formed is still conducted by his sons, C. G. and Wm. Scollay.

WM. C. WILSON, a native of Aberdeenshire, born in 1827, was at one time a very successful grower, with a large establishment at Astoria, L.I., which finally passed out of his hands, owing to his conservatism and his persistency in growing stock not desired by the trade. He was among the first of the florists to give the commercial Palm an impetus, as well as to build long greenhouses, although in our day his 300-foot house, then considered a monster, would excite but little attention. He died poor.

ROBERT LIDDELL, a native of Glasgow, where he was born in 1828, was for 30 years in the service of Peter Henderson, being at his death, in 1904, treasurer of the firm.

WILLIAM GREY, a native of Greenlaw, Berwickshire, where he was born in 1828, was one of the ablest private gardeners in the United States. He came to this country in 1851, and for years had charge of the famous collection of Orchids possessed by the late Erastus Corning, of Albany, N.Y. Mr. Grey was an entomologist of no mean order, and spent many years in pursuit of that study, his collection embracing 30,000 specimens from all parts of the globe. Especially was it rich in Sphingideæ, Noctuidæ melanic and dimorphic forms.

His son, Robert M., is an Orchid specialist, and has originated numerous Cypripedium seedlings. He also is an entomologist of ability. At present he is in Cuba on behalf of the Harvard Botanical Garden, conducting experiments in connection with various economic plants.

JAMES FLEMING (1833-1878), a native of Ayrshire, at one time had charge of the then finest collection of Orchids in the country, which belonged to Mayor Van Worst, of Jersey City, N.J. Mr. Fleming entered the seed business, and became a partner of Peter Henderson. He was a great friend of the young Scotch gardeners in America, inspiring and aiding them with hopeful words and sound advice.

Other associates of Peter Henderson were W. H. Carson and William Davidson, the latter of whom assisted Mr. Henderson on his *Handbook of Plants*.

JAMES Y. MURKLAND, also an Ayrshire lad, was a member of the seed house of Young and Elliott. He was secretary of the New York Horticultural Society, now defunct, and what success it had during his term of office was largely due to his energy and well-judged efforts.

DUNCAN ROSS, who was born on the Balgowan Estate, was one of the earliest wholesale cut-flower commission dealers in America, and was the only Scotsman whom I knew or have ever heard of in that branch of the trade. He died in 1896.

WM. MCKELLAR (1833-1900), a native of Paisley, received his training in Scotland on the estate of the Duke of Argyle. In the United States he achieved great success as a grower of Niphetos, once a very popular market Rose.

FARQUHAR MACRAE (1843-1905), a native of Ross-shire, served his apprenticeship at Conon Gardens, the estate of Sir Kenneth McKenzie. He came to the United States in 1870, and while yet a private gardener soon achieved success as a grower of Grapes. Later he became a commercial florist, and originated several varieties of Chrysanthemums. Mr. Macrae died in Providence, R.I. He was at one time president of his local florists' club, and for a term was vice-president of the Society of American Florists and Ornamental-Horticulturists. His brother, John Macrae, also of Providence, R.I., is a successful grower for market, being especially interested in Chrysanthemums; while a fellow apprentice, Donald Matheson, is superintendent of the Phelps Estate in New Jersey.

WILLIAM MCMILLAN.—A staunch, sterling type of Scotsman was William McMillan, a native of Inverness, one of the foremost of park superintendents of America, who landed on these shores in 1852. A clogging course to the majority of the city park systems in this country is their connection with politics. Mr. McMillan was appointed park superintendent of Buffalo, N.Y., in 1871, an office which he held most acceptably to all concerned for over a quarter of a century, but when politics interfered, and made the office of park superinten-

ment elective instead of appointive, whereby votes rather than merit determined the choice of the holder, Mr. McMillan refused to be a party to that system, immediately tendering his resignation. He afterwards laid out the Essex County Park system in New Jersey. He was an advocate of the natural system of park and landscape gardening, and by his writing and example aided much in the suppression of the "carpet bedding" which assumed some importance in the gardens of this country in years gone by. I cannot refrain from quoting the beautiful tribute paid to McMillan by Captain James Braik, himself an Aberdonian, at one time associated with him, and now the practical head of the Buffalo, N.Y., park department —"He was an ardent and intelligent student of horticulture in all its branches. He was a devout worshipper of nature unadulterated and of nature's God. He was the best and truest representative of our native land I have ever met in America. When those of us who knew him best and loved him most laid the body of this gentle, loving and lovable soul in the 'mools' in our beautiful Forest Lawn Cemetery (near his masterpiece, Delaware Park) more than one bitter tear was shed over his grave, and the remark made, 'We will not soon look on his like again.'"

The citizens of Buffalo, headed by the Scotch residents there, in recognition of Mr. McMillan's personal worth, as well as of the eminent services rendered to the community, erected a memorial to him in 1905. It is a drinking fountain, hewn out of rough granite, emblematic of his own sturdy, rugged, honest character, and is located in his famous creation, Delaware Park, being the first tribute of this kind ever paid to an American horticulturist.

A. D. COWAN, a native of Dalry, born 1850, died 1895, an expert seedsman, served his apprenticeship with Kennedy and Company, Dumfries. He managed a seed store in New York. Cowan was an excellent judge of Mushroom spawn, and his views on this subject have been incorporated in a recent work on *Mushroom Culture*.

DAVID ALLAN, born in Banff in 1853, served his apprenticeship on the estate of Sir George McPherson Grant, was a noted Orchid grower, and one of the best all-round plantsmen of his day. He died in 1896.

So far I have spoken mainly of the men who have passed from among us and of their achievements. I shall now briefly refer to those who, still in the midst of us, are following faithfully in the footsteps of their predecessors in upholding Scotland's reputation in the gardening world.

LIVING REPRESENTATIVE MEN.

W. R. SMITH.—Among the oldest of the Scotch gardeners in America still living is William R. Smith, superintendent of the Botanic Gardens, Washington, D.C., a post he has held for over half a century. He was born in 1828, and served his apprenticeship in Lord Elcho's gardens at Haddington. He entered Kew in 1853, whence he came to America. He first secured employment in Philadelphia as a private gardener, later going to Washington. He developed the Botanic Gardens from a swamp into the beauty spot they now present. Mr. Smith is the friend of presidents and statesmen. He is an enthusiastic admirer of Robert Burns, the Scottish poet, and possesses one of the largest private collections of Burnsiana in the world. He has been chairman of the Parking Commission of the District of Columbia for many years, and has done much to beautify the streets, squares, etc., of the national capital. Mr. Smith was instrumental in securing for the Society of American Florists and Ornamental-Horticulturists, of which body he was at one time president, a national charter. During his long career he has had several amusing experiences, one or two of which I may be permitted to relate here. A pompous senator walking one day in the Botanic Gardens, in company with Mr. Smith, confessed to the fact that he could see no utility in the garden, nor any plausible reason why Congress should maintain it. Casting a withering glance at the statesman, Mr. Smith is reported to have said—"My dear sir, if the Great Creator of the Universe had had utility in mind when he made you, He would have put you on four legs and set you to eating grass."

(To be continued.)

The Week's Work.

THE HARDY FRUIT GARDEN.

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

Planting trees.—While the weather remains favourable, the planting of all kinds of trees may still be performed. The work of pruning should also be pushed forward, but with the recent favourable weather much of this work should by now have been accomplished. Plums, Pears, Apples, Gooseberries, and Currants are all in a suitable condition for pruning. Nailing and tieing should follow the pruning without loss of time, for the flower-buds can now be distinguished quite easily. Where there are evidences of a plentiful supply of bloom, cut the shoots well back, with due regard to a proper regulation of the branches, especially those of young trees. If a branch is required to fill a vacant space, prune one of the shoots either above or below the vacant spot, almost to its base, and train in two of the shoots that will "break" next season. In the case of a fan-shaped tree, re-arrange the whole of the branches. To prevent birds from destroying the buds of Gooseberry and Currant bushes place some black thread smeared with bird-lime over the tips of the branches. After pruning is finished clear the ground, and lightly fork it over to make it tidy, and to bury the old mulching material, finally applying a good dusting of quick-lime.

Lifting.—Any tree that requires lifting or root-pruning may still be attended to while the weather continues mild. It is a good plan to lift cordon trees, and to furnish some fresh soil about their roots, every few years, especially when they are grown in very shallow borders. If these trees are moved carefully they will not suffer greatly by the disturbance.

The fruit room.—The majority of Apples are keeping well this season. I finished picking on December 1 with the fine late dessert variety Duke of York. The new Edward VII. promises to be a good keeping Apple. When a variety is desired for a certain date it can be kept for a period of about ten days longer than in ordinary circumstances by using Wood's microcide. I have experimented with this preparation on several kinds. I dipped the fruits in the microcide, and laid them by the side of others not treated, with the above result.

Apples and Pears in season include: Apples (dessert)—Ribston Pippin, Cox's Orange Pippin, Cockle Pippin, Brownlee's Russet, Christmas Pearmain, Allington Pippin, Barnack Beauty, King of Tompkin's County, &c. Culinary—Blenheim Pippin, Lane's Prince Albert, Sandringham, Bismark, Tower of Glamis, Gascoyne's Seedling, Mère de Menage, Lord Henniker, Lord Derby, and Hoary Morning. Pears—Doyenné du Comice (nearly finished), Glou Morceau, Winter Nelis, Passe Colmar, Charles Ernest, Bacon's Incomparable, Nouvelle Fulvie. These, with the exception of the first-named, will be in season for Christmas. Cooking: Catilac, Uvedale's St. Germain, Duchess de Mouchy, and General Todleben.

Cobnuts and Walnuts will never be in a better condition for use than now, but they can still be kept for a considerable time.

Medlars.—A few trees should be put in now and again, as the fruit from young, vigorous trees is larger than from old specimens. The Medlar does not require much pruning beyond thinning and keeping shapely. Good varieties are Dutch (very large and good-flavoured), The Nottingham (a small fruit, but one of the best), and Royal (large and a free-bearing variety). The best situation for Medlars is in a good, rich, loamy bank, which is moderately moist. The Medlar can be raised from seeds, and these should be sown as soon as ripe. They are sometimes two years before germinating. The quickest way to propagate Medlars is to graft them on to the Pear, Quince, or Thorn. The Thorn is best in dry soils, but the Quince is best for a moist position. When grafted 6 feet high on the Pear stock the trees are most suitable for ordinary positions and purposes.

Mulberry.—Trees are generally grown as pyramids. The Mulberry succeeds on nearly any soil, but the fruits ripen better on a light, well-drained soil. Trees may now be planted.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

Potatos in clamps.—Where signs of disease were evident when the crop was being "lifted," it is pretty certain that some of the tubers are now in a state of decay. Therefore, uncover the clamp and turn them over, carefully picking out all those affected. Choose a fine day for the work, and afterwards cover the clamp as before. Sufficient protection should be given the clamps by means of straw or bracken during frosty weather. Where Potatos are stored in a cellar, the tubers can be looked over during wet weather. Keep such tubers covered to prevent the air toughening the skin.

Rhubarb will now force readily, and especially if the crowns have been exposed to the weather and well rested. It is advisable to place some of the roots in heat fully exposed to the light; the growth will then become more like that made out of doors, and it is crisper, some cooks preferring it to the paler produce grown in the dark, as it has not the earthy flavour so noticeable in some forced Rhubarb.

Winter Tomatos.—The days being at their shortest, sunlight is very deficient. Keep the plants a trifle on the dry side, and in a slightly lower atmospheric temperature, during specially dark or foggy days. It cannot be expected that fruit will ripen rapidly at this season, and hard forcing would harmfully debilitate the plants. Slight top-dressings are of the greatest importance in encouraging healthy root action. Plants raised from cuttings in autumn will be ready for a shift soon after Christmas, and they may be successfully grown in an atmospheric temperature of 55°. Plants raised from cuttings become fruitful earlier than those from seed, but there is not much gain from either method over the other. Keep the plants as near the glass as possible.

Mint and Tarragon should be lifted and boxed-up to form a succession to the earlier batches raised from cuttings. These herbs are much in demand early in the year, and may be easily grown in warm frames or placed in a vinery or Peach house, where the daily syringings will be all to their advantage. Keep a look-out for greenfly if much heat is applied, but little trouble from this pest need be experienced if the plants are well supplied with water, both by syringings and applications to the roots.

Salads.—Sow seeds of Mustard and Cress and Radishes in warm frames at regular intervals. Lettuces grow slowly now and require care. Keep them well picked over, and the soil stirred between the plants. Place batches of Endive under cover for blanching purposes, and protect the outside crop from snow and frost with a covering of straw or leaves. Sudden changes in the weather have a disastrous effect on these plants when not protected.

Storing soils.—It is well to collect a quantity of soil and place it under cover in readiness for use when pricking off young vegetables early in spring. Soil is all the better for having been stacked for a short time at least before using. Repairs to old boxes can be carried out, or new ones made, during odd time at this season.

Pea sticks should be obtained as early as possible, and especially when they have to be cut on the estate, so that they can be sharpened or otherwise prepared for the next crop. Sticks serve their purpose well if they last two seasons, and if there is plenty of choice it is best to select Ash (which last longest) or Hazel. Spruce branches make the very worst stakes, being much too close for permitting freedom of growth. It is well to grade the sticks into different sizes for convenience when staking the plants.

THE FLOWER GARDEN.

By HUGH A. PETTIGREW, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

The flower garden in winter.—The present is naturally a dull and uninteresting period of the year, so far as the appearance of the flower garden itself is concerned, but yet much can be done by attention to neatness and order to make it inviting and cheerful even now. If the weather is "open," lawns and grass paths should be frequently brushed to remove worm-casts, and lightly rolled; this not only improves the turf, but at the same time greatly enhances

its appearance. For the winter embellishment of beds and borders in the immediate vicinity of the house, by the use of dwarf shrubs in pots plunged in the soil, has much to recommend it. When one considers the wealth of material to hand, suitable for this phase of gardening, it is surprising that it is not more practised, especially in gardens attached to mansions which are exclusively winter residences. Shrubs remarkable for their beauty of form or light gracefulness of habit, or those admired for their winter tints and delicate colouring of foliage, are all appropriate for this style of gardening. Under the category of such shrubs would be included many of our handsome "ornamental coniferæ," which alone offer material for attractive schemes of bedding, while the thought of "berried shrubs," which naturally arises, at once conjures up the prospect of achieving at least brightness, if not indeed gayness, in the design. Not only evergreen shrubs of attractive form and colouring may be used for this purpose, but also deciduous shrubs possessing brilliantly-coloured wood may with advantage have their place, and serve to relieve the sombreness of the garden in the dull days of winter.

A reserve ground needed.—An essential accompaniment to this form of gardening is a spacious reserve ground, which would be the home of the shrubs during the other months of the year. Naturally the site of this reserve garden would have to be so situated as to receive abundance of light, and be open in respect to air, to ensure the plants being retained in continued health, while at the same time facilities must be afforded for the plentiful supply of water, which is imperative to their well-being. The following list comprises some of the plants which are pre-eminently suitable for the purpose described, but there are many others which will of themselves occur to the reader.

Suitable plants.—Cupressus Lawsoniana and its numerous varieties, particularly "gracilis pendula aurea" and "lutea"; C. obtusa nana aurea; C. nootkatensis and its variety "lutea"; C. pisifera plumosa and its var. "aurea"; C. macrocarpa aurea; Juniperus chinensis aurea; Taxus baccata aurea; T. baccata fastigiata aurea and T. baccata semper-aurea; Thuya gigantea; T. orientalis aurea; T. occidentalis and many of its varieties; Cupressus [Retinospora] obtusa in variety, C. plumosa, and C. filifera; Aucuba, particularly the female plants, because of their berries; many of the Berberis; Cotoneaster Simonsii; Euonymus alatus americanus and E. europæus, the latter for its coral-coloured seeds; Hippophæ rhamnoides; many of the Willows; Cornus sanguinea and others; Hollies, Box, Laurel, &c., &c.

Mahonia twigs.—A simple means of covering and furnishing the ground of "parterres" during the winter, and the use of which is very much in vogue in France—particularly around Paris—is that of employing twigs of Mahonia. These twigs, or branchlets, are stuck into the soil methodically and evenly. The foliage keeps fresh and bright for quite a long period of time, and so is fitted for the object intended, and hides the coldness—and what is to some the repulsiveness—of the bare earth.

PLANTS UNDER GLASS.

By B. Cromwell, Gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, Liverpool.

Plumbago rosea coccinea is a useful plant at this season of the year, when a demand exists for choice flowers. For the decoration of the dinner table this plant is most suitable, owing to its lightness of growth and the brightness of its flowers. Its only bad quality is the short duration of its flowers when in a cut state, but this defect is more than compensated for by its extreme floriferousness. The culture of this plant is simple; its principal requirements are as follow:—After the flowering period is over, diminish the supply of water to the roots and rest the plants in a temperature of 55°. About the end of February the plants should be shortened back, shaken out of their pots, and, when repotted, placed in a brisk moist heat. When growth has well advanced they should be gradually accustomed to a lower temperature, and be finally placed in a cool pit or frame for the summer months. The structure containing these plants should be closed early in the afternoon throughout the summer, and the syringe should be used freely to keep red spider in check. Avoid over-potting; 6-inch pots will be found a suitable size. The potting medium should consist of good fibrous loam, leaf soil, sand and charcoal siftings. The drainage should be perfect, as the plants are impatient of excessive moisture at the roots. In September the plants should be accommodated in a warmer structure, and during the winter months they should occupy a position near the roof of a Melon or Cucumber house, as the colour of the flowers is much improved by affording the plants plenty of light. This Plumbago should not be retained after its second year of growth, as the flowers produced after this period deteriorate in both colour and substance.

Adiantum cuneatum.—If the fronds of this species have become shabby, the plants should be entirely defoliated. Previous to performing this operation the roots should be kept somewhat drier than is usual. If the plants are in a proper condition at the roots, and the drainage perfect, they may be placed in a temperature of 65°-70°, where they will soon furnish a new crop of leaves, which will be useful for decorative purposes during the early spring months; batches of these Ferns may be thus treated every fortnight, to ensure a succession of fronds.

The Potting Shed.—The present period affords an opportunity to cleanse and limewash the walls of this structure, and to put everything in order ere the busy time for potting commences. The various kinds of materials required in potting should be stored and kept dry. Pots should be sorted and cleansed, stakes should be re-pointed and painted, for these details attended to will lessen the amount of work when the busy time arrives.

Stove Temperatures for the month should not exceed 62°-65° at night time, while 68°-70° is ample during the day. Use every means to economise the fuel when the sun raises the temperature 5° higher than the figures I have given.

FRUITS UNDER GLASS.

By T. W. Birkinshaw, Gardener to Lt.-Col. Sir Chas. Hamilton, Bart., Hatley Park, Bedfordshire.

Strawberries in pots.—The earliest batch of Strawberry plants should now be started if fruits are required very early in the season. A small number should be selected, because much better results will be obtained from plants which will be introduced into the forcing house early in the New Year. The plants this year seem to be well "ripened," owing to the favourable summer, and the recent frosts will have prepared them for responding to the influence of heat. In regard to forcing, it is not often that a house can be set apart for these plants, therefore they have to be accommodated in the Peach houses and vineries that have just been started, but, nevertheless, good results may be obtained from them. Before taking the plants indoors all dead leaves should be removed from them, at the same time retaining every bit of green leaf. Lay the plants on their sides, and give them a thorough good syringing in order to dislodge any insects that may be present. I do not advise the application of a top-dressing, or that the surface soil should be loosened, it being better to depend more on artificial feeding with "Le Fruitier" later on. Those who have a pit which can be filled with new tree-leaves, for the plants to be plunged in, will have the greatest advantage in the attempt to secure earliest fruits. Royal Sovereign and La Grosse Sucrée are two excellent varieties for early forcing, and Monarch is a good variety for succession.

Fruit in pots.—Plants that are now carrying fruit will require careful watering and good treatment. As the fruits begin to change colour, they may be cut from the plants and placed on a dry shelf in a warm house. This will relieve the plants, and allow the fruits that are left more room and light to aid further development.

Raising young plants.—In order to obtain ripe Tomatos as early in spring as possible, a sowing should now be made of Sunrise or Perfection. Where a large quantity is required, shallow pans are preferable for raising the seedlings. The seed should be sown thinly in light, open soil, and the pans placed in an atmospheric temperature of 60°. When the seedlings are through the soil, place the pans on a shelf well up to the light, so as to secure sturdy growth in the plants. When they have made two or three young leaves, dibble the plants singly into 3-inch pots, using soil of rather coarse description, and keep them growing in the same degree of heat, giving them subsequent shifts as they require it.

Orchard House.—This structure should now be thoroughly cleaned out if the work has not been already done. Before placing the trees in the house, let each be made scrupulously clean. Plum, Pear, and Apple trees may still be allowed to remain in the open air, but the pruning of them may be carried out at once.

THE ORCHID HOUSES.

By W. H. White, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Imported Dendrobiums.—Numerous plants of the recently imported Burmese Dendrobiums have assuredly by this time passed into the care of various cultivators, some of whom are experienced growers, whilst others may now be only commencing to interest themselves in the cultivation of these plants. As regards the newly-acquired pieces of D. Wardianum, some cultivators may prefer to grow them in the ordinary flower-pot, others may find it more convenient to place them in shallow Orchid pans, that may be suspended from the roof; but whichever kind of receptacle is used it should be just large enough for a plant for several seasons. The receptacle should be nearly filled with drainage materials, and the plants need to be made quite firm in the pots by tying the pseudo-bulbs to neat stakes, while those in pans may be easily fastened to the wire suspenders. By keeping the plants firmly in their places they will be able the sooner to obtain a good root-hold. The crocks in which the plants are placed should be very sparingly watered at first, and as soon as new roots are seen pushing out from the base of the young growths, a compost of equal quantities of fibrous peat and sphagnum-moss may be packed firmly around them in the ordinary manner. Afterwards, as the roots form, and the new growths gain in strength, water may be more frequently and liberally afforded. A cool, dry part of the Cattleya or intermediate house will suit them during the next few months, but when growing freely they will require a more genial atmosphere. These remarks are also applicable to the recently imported plants of D. nobile. Those plants of the evergreen species, D. thyrsiflorum and D. chrysotoxum, should be similarly treated as regards potting, &c., but in a few weeks' time the warm, moist atmosphere of the plant-stove will be more suitable for them.

Cypripedium Fairrieanum is again being imported in large numbers, and it is probable that by this time plants are to be found in almost every collection in the country. At Burford we have plants growing well alongside the different varieties of Cypripedium insigne, &c., also with Miltonia vexillaria, and in the warmer atmosphere of the Cattleya house, some are suspended in a shady position near to the roof-glass, whilst others are standing upon the ordinary staging, and up to the present time there is no perceptible difference in the growth of the plants.

Oncidium Marshallianum.—Recently imported plants should be placed in pots of suitable sizes which should be filled with crocks. The plants require similar treatment to that advised for the Dendrobiums, but they should be placed in the cooler division. When the roots show signs of pushing out it will be advisable to repot them. For the provision of drainage I twist some well dried pieces of Fern rhizome around the bottom of the pot, and for a compost use peat, leaf soil, and sphagnum-moss in equal parts, intermixing with it a moderate quantity of small, broken crocks to prevent rapid decay and to increase the drainage.

Deciduous Calanthes.—In the warmest division plants of the C. vestita section are now flowering, and only a moderate quantity of water should be afforded till all the flowers are expanded, when it should be withheld altogether. Arrange the plants in a cool part of the house, or, if more convenient, they may be removed to a similar position in the Cattleya house, and, if it is possible to keep their surroundings somewhat drier than is necessary for the other occupants of the house, the flowers will last a long time in good condition. If the flowers are opened in the Cattleya house, they generally last longer, and when cut for decorative purposes will fade less quickly than those which open in the East Indian house or plant stove.

EDITORIAL NOTICE.

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

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

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

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

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

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

Editor and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DECEMBER 25—*Christmas Day*, Quarter Day.

WEDNESDAY, DECEMBER 26—Bank Holiday.

SATURDAY, DECEMBER 29—Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—38·3°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, December* 19 (6 P.M.): Max. 47°; Min. 38°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, December* 20 (10 A.M.): Bar., 30·5, Temp., 40°; *Weather*—Foggy.

PROVINCES.—*Wednesday, December* 19 (6 P.M.): Max. 48° Wigtonshire; Min. 43° Cambridge.

"The Plants of the Bible." This is not the first book that Prof. Henslow has written on this subject. A "primer" bearing the same principal title was issued by him some few years ago. The present volume is an expansion of the former one, with various additions. Fruit and timber trees, shrubs, flowers, herbs, agricultural plants, textile plants, spices, perfumes, dye plants, desert plants, and water plants are all passed in review. Of course, in many cases, it is impossible to determine with accuracy what precise plant was intended by the Scriptural writers. Often a particular term was used in a general sense, or had a symbolical significance attached to it, just as nowadays people speak of Roses, Lilies, or Laurels, and apply those names to many different plants, without the slightest regard to their strict botanical application.

In other cases it is possible to state with more or less confidence what the writers had in view. The determinations are arrived at from internal evidence furnished by botanical characteristics, from a knowledge of the existing flora and climatal relations of Palestine and adjacent countries, and from philological deductions from the Hebrew, Arabic, and Greek languages.* Prof. Henslow has availed himself of all these sources of information, and has first-hand knowledge of the vegetation of Eastern lands. He states his opinions very lucidly, and gives copious references which will enable the curious to pursue the subject more fully. In a few cases, the professor has supplied his own interpretation of the significance of certain names—for instance, *almug*, which he identifies with the Yew. The manner in which he arrives at this conclusion is typical of his procedures throughout. He first cites the Scriptural books in which the name appears, and then gives the opinions of preceding commentators which all point in the direction of some coniferous tree growing on Mount Lebanon. Then he takes us to Nineveh, whence have been obtained portions of wooden beams which on microscopical examination have proved to be made of the Yew. In Greek, we are told, the Yew was called *Smilax*, and hence the question arises what, if any, connection is there between the Hebrew word *almug* and the Greek *Smilaks?* Take away the initial and the terminal letter s, and we are left with milak—now *k* is equivalent to *g*, and *m* and *l* are supposed to be transposed, and so ultimately we arrive at *l, m, g,* or *almug*! Philological sleight of hand of this description would enable us to prove (?) anything. As in the case of statistics, the evidence requires to be very fully sifted to see what is relevant and what imaginary. It would not become us to express an opinion on this particular case. We cite it to show the care which the professor has taken to cull information from all accessible sources. We feel that we are on safer ground when we demur to the author's statement on p. 53 that the sweet, juicy scarlet cup which surrounds the seed of the Yew is very poisonous. It certainly is not so always, though the seed itself, like the foliage, may be.

Under the head of Willow, Mr. Henslow speaks of Salix babylonica as a native of Palestine. It is generally considered to be a native of China, and that the "Willows" upon which the Israelites hanged their harps were more probably what we now know as Populus euphratica. Very few flowers are mentioned in the Bible by name. The true Rose, as we understand it, is not alluded to in Scripture; what does duty for it, according to our author, is the Meadow-Saffron, Colchicum autumnale. It would take up too much of our space to allude to any other plants mentioned by Prof. Henslow. We have said enough to show that the book is of very special interest to the general, as also to the botanical, reader, and that if there is room for differences of opinion as to the identity of species, there is none as regards the diligence and skill of the writer. There are numerous illustrations and a good index. In connection with the botany of Palestine, we may refer to Mr. Sutton's letter from the Holy Land printed in our issue of April 28.

* *The Plants of the Bible: their Ancient and Mediæval History*, popularly described by the Rev. Prof. Henslow. ([illegible] & Co.)

*** **OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle* Almanac for the year 1907. *In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents, will send us* **IMMEDIATE INTIMATION** *of all fixtures for the coming year.*

LETTERS TO YOUNG AND OLD.—By Mrs. C. W. EARLE, author of "Pot-Pourri from a Surrey Garden," &c. (London: SMITH, ELDER & Co., 15, Waterloo Place). A book by Mrs. EARLE can be taken down at any time with the assurance of finding something in it to amuse and interest. The present volume is in this matter no exception to its predecessors, and readers of all ages and of varied tastes will enjoy it. Here are letters written by the authoress from Germany and from Paris, as well as many pages devoted to gardening topics, and there are also included some very interesting letters sent by Lady NORMANBY from Paris in the eventful year 1848. Mrs. EARLE need not write deprecatingly of her own contributions to these chapters, for her unassuming gardening notes offer many suggestions to other lovers of plants and they show appreciation and discrimination where uncommon or new varieties are concerned. As we cannot be expected to sympathise entirely with all the many opinions here expressed, it is no bad compliment to say that the remarks of the author on a vegetarian diet seem to us extreme. But from this topic and from cookery receipts it is easy to turn back to the safer subjects of travel, household management, or modern history. The arrangement of the letters into chapters makes them very convenient for reference and each chapter or section is prefaced by an appropriate quotation from some standard author. The book is nicely got up, so that being in all ways attractive, it would make a seasonable and welcome gift both to those to whom previous volumes by Mrs. EARLE are ranked as old friends and to others who will find her writings new and pleasant acquaintances.

ORNAMENTAL-LEAVED BEGONIAS.—As market plants, a writer in *Muller's Deutsche Gartner-Zeitung* recommends the cultivation of "Leaf" Begonias in pots in hot-bed frames, in which growth is better and the leaves firmer than in warm houses, the colours more intensive, and lastly the plants are less liable to attacks from disease and mites. When the roots have reached the sides of the pots the amount of air afforded should be largely increased. It is advisable to put a thin shading of lime and sour milk or other mixture on the glass in order to prevent the scorching of the leaves, and in very hot weather to supplement this with some portable shading. These "Leafed" Begonias make excellent material for filling jardinières, large vases, and bowls. *F. M.*

POTATOS IN SURREY.—The following extracts are taken from Mr. JOHN WRIGHT's report on the Potato trials at Merton in 1905, and at Farnham in 1906. For the purpose of testing the influence of seed tubers from cooler and later districts with Surrey and Middlesex raised tubers in the production of crops, an equal number of tubers were procured last year and planted side by side in dark sandy soil at Merton. Though all were grown under identical conditions of soil, manure and weather, the results varied enormously. The yields are accurately summarised as follows:—*Crops at Merton, 1905.*—From Irish sets, 140 lbs.; Scotch sets, 119 lbs.; Middlesex sets, 74 lbs.; Surrey sets, 71 lbs. As may be seen at a glance, the difference between the worst crops (from Surrey grown seed) and the best (from Irish seed) is within a shade of 100 per cent. The planting tubers from Ireland were a trifle larger than those from Scotland, but not than those which were raised in Surrey. With such remarkable divergencies in yields, another test of the same nature became necessary for confirmation or otherwise of the facts obtained. At Farnham this trial was placed in the charge of Mr. A. DEAN, a recognised expert, who contributes the following pertinent observations: "The results obtained present to all Potato-growers bear out what was found in the previous trial and other experience in the south of

England. It is also interesting to find that not only do Irish seed tubers prove to be as reproductive as the Scotch seed, but in some cases the products exceed those from the last-named source. This may be seen in summarised form, taking the first six varieties from the table, i.e., the yields from an equal number of tubers of each variety." *Crops at Farnham, 1906.*—From Surrey tubers, 65 lbs.; Lincoln tubers, 150 lbs.; Scotch tubers, 225 lbs.; Irish tubers, 237 lbs. *Variety trials.*—On spare land in the seed trial enclosure equal numbers of tubers of the undermentioned varieties were planted, with the results appended: Conquering Hero (Irish), 38 lbs., Up-to-Date (Basingstoke), 38 lbs.; Peckover (Wisbech), 36 lbs., Superlative, 28 lbs., The Scot, 26 lbs. Several varieties from Surrey sand gave such poor yields in comparison that they are not worth mentioning. *Soil.*—If we take from the table of results six typical yields, we find the average to be as follows: From sand, 61 lbs.; peaty loam, 135 lbs., medium loam, 188 lbs.; strong loam, 233 lbs. It may be that in a wet season strong soil might not give equally good results, while the land of good medium texture might give somewhat better. Light, poor, sandy soil should be avoided for Potato culture where stronger land is available. *Climate.*—Beyond doubt climate is an important influencing factor. In the south the tubers are liable to *over-ripening*, and the harder they become, as in sandy land, the more they are impaired in reproductiveness. The matter has been thoroughly tested in a carefully conducted series of trials by Messrs. Sutton & Sons, Reading, during the past and the present seasons. Immature tubers give better results in crops than hard, fully-ripened, or *over-ripened* tubers can do in any kind of soil. That is the rule. There are no worse Potatos for planting than those grown in Surrey sand in a dry, hot summer.

THE SWEET PEA TRADE in England is reported in the *Florists' Exchange* to be simply phenomenal.

THE LATE COUNT DE KERCHOVE DE DENTERGHEM.—All those interested in progressive horticulture, and especially visitors to the Ghent quinquennials, will realise the extent of the loss entailed on European horticulture by the death of the President of the Société Royale d'Agriculture et de Botanique de Gand. Many such persons will feel it a privilege to contribute towards the memorial which is to be erected in Ghent to perpetuate the memory of a man as remarkable for the number, variety, and excellence of his public services, as for his personal character. It is to be hoped that such a response will be forthcoming as will show that our countrymen are not insensible to the many services rendered by the late Count to horticulture or ungrateful for the abundant manifestations of helpful courtesy bestowed upon them at the quinquennials and on other occasions. Subscriptions for the above purpose may be sent to Dr. MAXWELL MASTERS, F.R.S., 41, Wellington Street, Covent Garden, and will be acknowledged in these columns.

CIDER-MAKING.—At a recent meeting of the Devon and Exeter Gardeners' Association, Mr. HENRY WHITEWAY, a member of the firm of Messrs. WHITEWAY & Co., cider manufacturers, of Whimple, stated that, in addition to the produce of 240,000 acres of orchards in the country, Great Britain annually consumed imported Apples to the value of nearly three millions sterling, besides large quantities of Apple juice in the shape of cider, concentrated Apple juice for sauces, and Apple vinegar. The demand for Apples was practically unlimited, and even France and Germany were large importers of the fruit. As regarded his recent visit to Germany, Mr. WHITEWAY remarked that he was bound to say he saw nothing in that country's mode of cider-making which was worth imitating. But the most astounding thing to him was to be told that—in a country where the small peasant farmer tilled his land to the very last inch abutting on that of his neighbour's, and where the hedgerows were even dispensed with to make the most of the land, and where the culture of the Apple tree had been understood for ages—after Christmas in each year Germany depended upon America and Canada for a very large proportion of the Apples required. If an English farmer were asked to sprinkle a little fluid over every tree in an orchard, say of three acres, he would probably demur, but in America and Canada the farmer who had a hundred acres of orchard would not miss spraying every branch three or four times, or at any rate once or twice, every spring. The value of the operation for destroying insect pests, preventing spotted and worm-eaten fruit, and for promoting the healthy growth of the tree and foliage, was so well recognised that a Canadian farmer would no more think of omitting to spray his orchard than a Devonshire farmer would neglect to dip his sheep.

THE NATIONAL AMATEUR GARDENERS' ASSOCIATION held its sixteenth annual dinner at the Holborn Restaurant on the 11th inst. Mr. T. W. SANDERS, F.L.S., presided. In proposing the toast of "The National Amateur Gardeners' Association and its Affiliated Societies," the president commented upon the remarkable growth of the association since its inauguration 16 years ago, a success which was in large part due to the untiring efforts of the officers, and in particular to the secretary, Mr. RICHARD CORDWELL.

LIST OF SEEDS FROM LA MORTOLA. We have received from Mr. ALWIN BERGER, Curator, a list of the seeds collected during 1906 in Sir THOMAS HANBURY'S garden at La Mortola, Ventimiglia, Italy, and note among them many beautiful and uncommon species. Growers wishing to obtain seeds or cuttings should make speedy application for them, mentioning what seeds or plants they can offer in exchange. A list of "desiderata" is given in the list and should be consulted.

SUCCULENTS AT MANCHESTER.—The collection of the late Mr. DARRAH, of Heaton Mersey, has been presented to the city of Manchester and has been housed in the Alexandra Park where suitable buildings have been erected for the culture of these very interesting plants. We have at various times given illustrations from Mr. DARRAH'S collections, and can heartily congratulate the city of Manchester on possessing so fine a collection. Mr. ARTHUR COBBOLD, we are pleased to see, remains in charge of the collection.

NEW HORTICULTURAL THERMOMETER.—A new horticultural thermometer, sent out by Messrs. NEGRETTI & ZAMBRA (38, Holborn Viaduct), has the glass tube and bulb filled with spirit guaranteed to maintain its red colour under all circumstances. The figures and divisions are plainly marked and it is especially strongly made. A self-registering thermometer for determining the greatest cold during the absence of the observer is a necessity in the outfit of both the professional and the amateur gardener.

MILD WEATHER IN DECEMBER 100 YEARS AGO.—A correspondent, who is evidently somewhat irritated by his elders' frequent references to the "good old times" when the winters were really cold, and the fact was reflected on what answered to Christmas cards by the robin and the snow-covered ground and Holly, has sent us the following extract from the *Northampton Mercury*, of December 13, 1806:—"The extraordinary mildness of the present season is shown in several remarkable instances. At Hampton-Lucy, in the grounds of Mr. OSBORNE, of that place, there is a May-bush now in bloom, and in the garden of Mr. FORSTER, surgeon, there is an Apple-tree in full blossom." Our correspondent may therefore console himself. "History repeats itself" in respect to the weather conditions of our country, as in many other things, notwithstanding the contempt of "the oldest inhabitant" for all things modern, and the change that has taken place in the character of our Christmas cards.

WEED-KILLER POISON.—At Chelmsford, the Medical Officer has reported that in some suspicious cases at Margaretting, he found eight people suffering from arsenical poisoning. The affected persons had drunk beer from a gallon bottle, in which the doctor found a crust of arsenical salt sufficient to kill nearly the whole village. The bottle was purchased at a farm-sale, and it probably (says a newspaper report) had been used to hold sheep-dip or weed-destroyer, which had dried up.

DAHLIAS.—The following First-Class Certificates were awarded by the National Dahlia Society to new Dahlias in 1906.—Show—Gloria and Claret Cup, Mr. S. MORTIMER. Cactus—Meteor, Dr. G. G. Gray, Diavolo, Rev. Arthur Hall and Sunshine, Messrs. J. STREDWICK & SON; Daisy Staples, Messrs. F. CARTER & SONS. Hyacinth and Ruby Grinsted, Messrs. J. STREDWICK & SON. Pompon—White Perfection, Mr. W. EACOTT; Portia and Rodney, Mr. CHARLES TURNER. Singles—Kitty, Messrs. J. CHEAL & SONS, Mavourneen, Mrs. M. V. SEALE. Special Awards on September 6, 1906:—Silver Medal, for best bunch of Cactus Dahlias in Trade Classes—Messrs. J. STREDWICK & SON, for Rev. Arthur Hall. Silver Medal, for best bunch of Cactus Dahlias in Amateur Classes—Rev. A. BRIDGE, for Fairy. Bronze Medal, for best new Show or Fancy Dahlia—Mr. S. MORTIMER, for Gloria.

Publications Received. Liverpool University, Institute of Commercial Research in the Tropics. *A Catalogue of the Aburi Gardens.* This is a "complete list of all the plants grown in the Government Botanical Gardens at Aburi, Gold Coast, West Africa," prepared by Mr. A. E. Evans, Curator of the Gardens.—Board of Agriculture and Fisheries. *Report on the Decline in the Agricultural Population of Great Britain, 1881-1906.*—County Council for the County Palatine of Lancaster. *Report of Experiments on Liming Meadow Land.* By Edward Porter and R. G. Gaut. Mr. H. Lloyd Snape, Director of Education, forwards this important report, which deals with a comparison of the use of ground limestone with that of ground lime and of cob lime.—*Farm and Home Year-Book for 1907.* This well-known publication will be welcome as usual to all interested in agriculture and fruit-growing, and contains many useful notes as well as the longer articles. It is brought up to date, and written by competent authorities.—*The Estate Magazine*, December. This is a Supplement to the *County Gentlemen's Estate Book.* The contents include articles upon Whaddon Hall, The Woburn Experiments, Weeds and Leaves as fodder, Gardening, &c.—*The Garden City*, December.—*Agricultural Bulletin of the Straits and Federated Malay States*, September. H. N. Ridley and J. B. Carruthers.—*Bulletin of Miscellaneous Information, Botanical Department, Trinidad*, October. Edited by J. H. Hart. With notes on Castilloa, Cacao diseases, the Date Palm, &c.—*Bulletin of the Department of Agriculture, Jamaica*, November. Edited by W. Fawcett. Contains notes on rubber-producing plants.—*Report of the Board of Commissioners of Agriculture and Forestry of the Territory of Hawaii.* For the year 1905. Various trials were made with Tobacco and with different fruits. Much successful work was accomplished and progress made.—*The Salvation Army Emigration Gazette.* November. A new publication that gives an idea of the useful work undertaken by "the Army" in assisting emigrants. Canada offers a still open field for them, and gardeners (amongst others) are recommended to try life in Ontario, where, if strong and able-bodied, there is no lack of employment, and their wives and families will be made equally welcome with themselves.—*Live Stock Journal* (Vinton & Co., Bream's Buildings, Chancery Lane). Of special interest to breeders of cattle, horses, sheep, &c. Copiously illustrated and with much useful information.—*The World's Work*, December. A very "fresh" magazine, full of practical interest and richly illustrated (London: Heinemann).

ROME.

THE BORGHESE GARDENS.

THESE gardens were originally established, or commenced, early in the 17th century, by Camillo Borghese, who was raised to the Papal Throne in 1605. He already had a villa and gardens at

[Photo by Mr. J. Cheal.

FIG. 159.—VIEW IN THE BORGHESE GARDEN, ROME.

Frascati, but he desired a residence where he might receive Ecclesiastics, Roman nobility, foreign ambassadors, and Court-ladies nearer to Rome. He therefore built the fine villa and commenced to lay out the gardens. These gardens soon became famous and were frequently opened to the public. In after years they were enlarged to a considerable extent by succeeding owners. The family of Borghese was an old and influential one in Rome, and amongst its members was Pauline, sister of Napoleon I., who married Don Camillo Borghese in 1803.

About half a century ago the gardens passed into the hands of the Corporation of Rome, and they considerably altered and adapted them to the requirements of a public park. Although the original character of the garden had thus been partially destroyed, yet many of their old features have been retained, noticeably the "Garden of the Lake," with its swans and Pseudo-Greek Temple (see fig. 160), which is so beautifully reflected in the water, and is surrounded by lovely woodlands, brilliant in the spring with the pink flowers of the Judas tree. There are beautiful drives laid out through the well-wooded grounds, which are a fashionable resort of Roman society to-day, whilst its ample terraces form promenades for citizens.

It is interesting to note that Duff House, which has just been presented to the Corporation of Banff and Macduff by the Duke of Fife, is an imitation of the celebrated Borghese Palace.

THE VATICAN GARDENS.

The Vatican Hill has been from prehistoric times a sacred and interesting spot, and was anciently the Garden of Agrippina, and the Circus of Caligula. Pope Sextus IV., who first laid out the gardens in somewhat of their present form, surrounded them by terrace-walls and high hedges, and they are all a good example of the 15th century style of Italian gardening.

The terrace, from which the accompanying view was photographed (see fig. 161), affords the most beautiful view of the Dome of St. Peter's, and has long been a favourite promenade of successive Popes.

There are many interesting and beautiful features in these extensive gardens, which are open to visitors after obtaining the necessary permits.—*Joseph Cheal, Crawley.*

In addition to the photographs kindly sent us by Mr Cheal, we have reproduced others at fig. 162, which were obligingly placed at our disposal by Mr Sprenger, of Naples. These illustrate the decorative purposes to which Agaves and Palms are employed in Rome, and incidentally, also the attractive appearance of the Railway Stations in that city.—ED.]

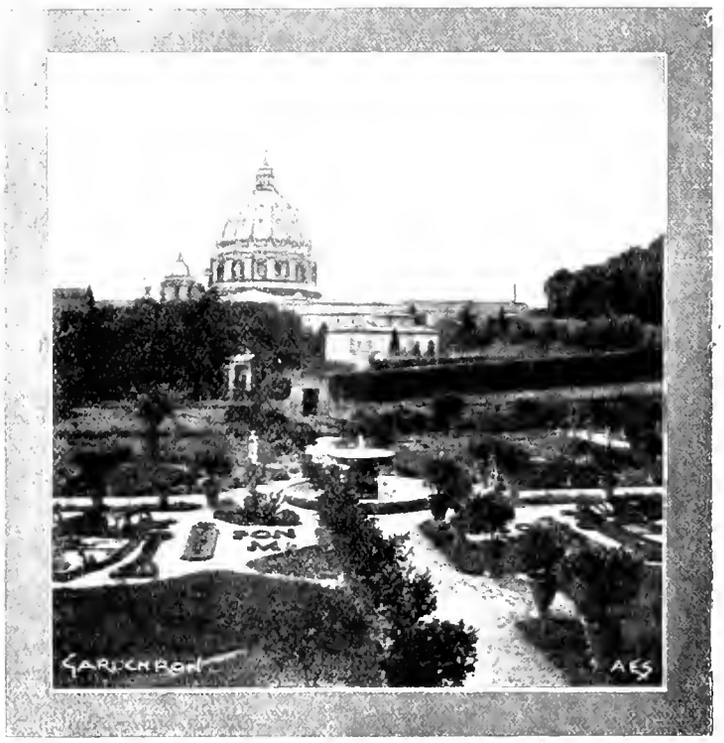
[Photo by Mr. J. Cheal.

FIG. 160.—VIEW IN THE BORGHESE GARDEN, ROME.

VEGETABLES.

COOKING POTATOS AND SOILS.

No test of the merits of any variety of Potato in a properly cooked state is complete or satisfactory unless tubers of equal size and grown under similar conditions of culture, but on soils of diverse nature, are included. Recently I had sent me from Dorset chalk, even-sized tubers of both Factor and Up-to-Date. Having samples of these varieties of equal size from medium loam and from black sand in Surrey, I was enabled to test the merits of each when cooked, and found those from the chalk to give much the best quality, loam coming next and the black sand last. But it has long been notorious that chalk, whilst on the whole not giving the heaviest crop, invariably gives the best table quality. Thus in any Potato-testing in a cooked state, one variety from chalk, another from loam, a third from sand, a fourth from clay, and a fifth from bog, it will be found that it is the soil on which the tubers are grown which determines the table quality. *A. D.*



[Photo by Mr. J. Cheal.

FIG. 161.—THE VATICAN GARDEN AT ROME, SHOWING THE DOME OF ST. PETER'S IN THE DISTANCE.

THE GRASSITES.

A PARABLE FOR THE SEASON.

ONCE upon a time there was a world very much like our own, but upon which nothing but vegetation had been evolved, so that there was nothing but trees and shrubs and smaller plants of many kinds down to tiny mosses, and even to still tinier vegetation that could only be seen had microscopes existed, which, of course, was not the case. This state of affairs had lasted for many quintillions of years, and although there was naturally a good deal of pushing and shoving among the plants for elbow room and light and a good many weaklings thus came to grief entirely, there was a sort of balance arrived at which enabled the bulk of the plant-world to live and even flourish. In course of time, however, something akin to thoughts and ideas became developed in every plant, and these being naturally the outcome of their environment, it came to pass that the bold and lofty trees had broader

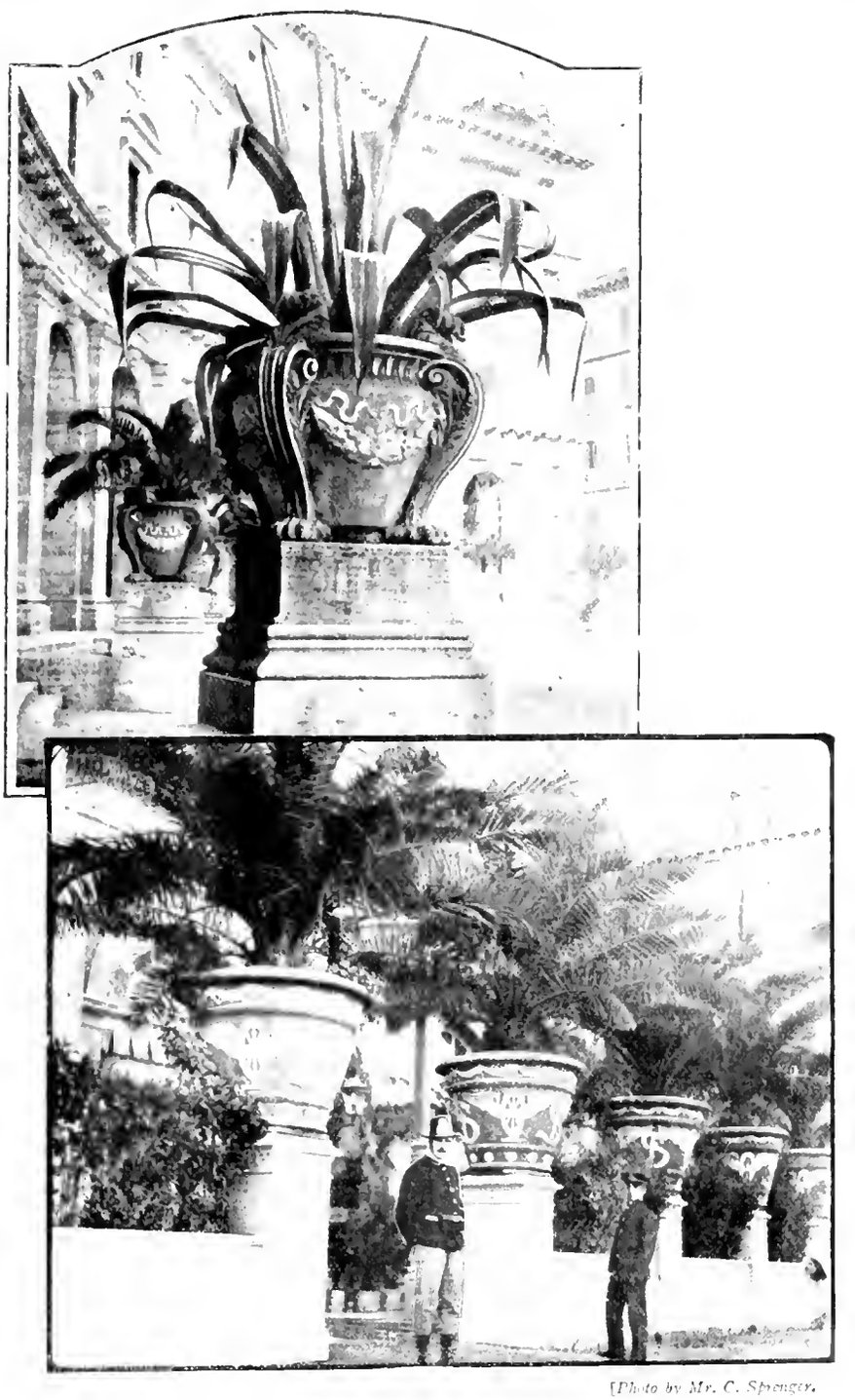
views and were more far-seeing than was possible, say, for the grass of the fields, which could not even see any farther than its neighbours, and being so cramped in view was inevitably more short-sighted than the big trees aforesaid. All through the vegetable world there was thus a grading downward and upward from the grand to the infinitesimal, and vice versâ. Still for a long time these differences led to nothing, but presently the idea got about—how it is difficult to say, but it did—that one opinion was as good as another, and that this being so the more there were who had a particular opinion, the greater the chance there was of that opinion being right, and this idea led to another, for the grass population, in which each blade counted as an individual, began to put this and that together, and finally claimed that as they formed by far the largest number, making what they called in their vegetative tongue "a madjority," they should practically rule the roost and be, not exactly the kings—they did not like to put it like that—but the "bosses" over all the rest of plant-creation. The big trees listened to all this, as did the shrubs and other larger vegetables, and being eventually summoned to a sort of conference by the Grassites, were foolish enough to accept their views as regards the equality of value of all opinions and though they did not mention this (not having grasped the fact), the consequent equality of a blade of grass to the nob'est Oak. Some, indeed, of the most far-seeing trees had their doubts, but as unfortunately the tree party at the conference had already unwittingly gone far in the same direction, by admitting a lot of inferior shrubs and assertive weeds to a voting equality, the Grassites were granted in all future councils equal individual rights with the trees, so that if a big Oak tree said "No!" and a blade of grass "Yes!" the one counterbalanced the other. This was termed, also in vegetative language, "universal sufferage." Having got this length, the Grassites now began to assert themselves and to complain that the big trees and many of the shrubs were encroaching on their rights by growing far too high and spreading their branches far too widely, so that they monopolised large areas of ground upon which thousands of Grassites could otherwise flourish, and that this sort of thing was an injustice, an oppression, and several other things of that unpleasant kind, and at the next meeting of Parleyment it was decided by an overwhelming madjority, that although the Grassites did not see their way to cut down the existing trees and shrubs, the offspring of these should be deprived of their hereditary tree tendencies and should be reduced to Grassite dimensions so as to uphold the great law of "equality" in the adopted motto of vegicreation. The poor trees and shrubs saw, alas! how greatly they had erred, but it was too late, and in the course of a generation or two all the great forests and thickets, and even the Roses and Lilies and all their tribe, had disappeared, and the Grassites alone ruled the world. Now, however, strange to say, it came to pass that among the Grassites, the big trees being gone, very marked inequalities began to be noted, such as the big Bamboozians, the smaller but worthy Cerealians, and the small fry of the Pastureans, and as the Pastureans were in the so-called madjority, the big Bamboozians and the worthy Cerealians also disappeared, and the whole world was like a fine lawn. Now, however, when everybody ought to have been content, there began to be a great lack of rain, which is the life blood of the Grassites, and when it did fall, instead of dripping "like a gentle dew from Heaven," it came in rushing torrents, sweeping the Grassites away into the rivers and into the ocean, and when it passed leaving bare wastes to be sunburnt and rendered sterile as the desert and utterly inaccessible to Grassites. Then and then only did it dawn upon this miserable little folk, that the big trees and the shrubs and the Roses and Lilies which they had banished had practically provided the life-giving rain by their beneficent influence, and that the levelling of plant-society they had brought about by their vanity and ignorance had literally become a dead level, and though they had got their desert in one sense, they had also unfortunately got it in another.

But their misfortunes were not yet ended, for the doctrine of equality began now to be asserted by all the still lower forms of vegetation than the Grassites, the mosses, lichens, seaweeds, fungi—nay! even the very bacteria themselves held a conference, and as the bacteria outnumbered the Grassites, forming even a "madderjority," everything was eliminated but the bacteria themselves, and the whole world became optically lifeless! *Chas. T. Druery, V.M.H., F.L.S.*

IMPORTANT DEPUTATION ON RAILWAY RATES.

On Thursday, the 13th inst., Mr. Lloyd George, President of the Board of Trade, received a deputation of about 130 representatives of all important industries and Chambers of Commerce throughout the Kingdom, including 27 M.P.'s, who sought the help of the Government in aid of a Bill presented by Mr. Hooper, Member for Dudley, "To amend the law relating to Railway and Canal Companies' rates and conditions of conveyance."

The deputation had been arranged by the Mansion House Association on Railway and Canal Traffic, the market gardeners being represented by Mr. W. J. Lobjoit and Mr. Walter Mann, horticultural traders and nurserymen by Mr. Rivers and Mr. Cuthbertson (Dobbie and Co., Fruit and Potato Trades' Association by



[Photo by Mr. C. Sprenger.

FIG. 162.—A RAILWAY STATION AT ROME, SHOWING THE DECORATIVE EFFECT PRODUCED BY AGAVES AND PALMS.

(For text see page 428.)

Mr. John Dennis and Mr. Geo. Monro, of Covent Garden.

Mr. Hooper went very fully into the grievances caused by the combinations of railway companies, and especially in regard to the objectionable conditions of the owners' risk rate, and was supported by Sir W. Tomlinson, Lord Brassey, Mr. Edmunds, M.P., Lord Glantawe, and Mr. Geo. Monro, president of the National Fruit and Potato Trades' Association.

The latter stated that possibly no industry represented in that large gathering was so penalised by the railways as the fruit-trade, mainly arising from the fact that when the existing classification was approved by Parliament, fruit-selling was but a small trade, and therefore was not represented. The railway companies consequently had imposed fancy rates, and the only reductions now obtainable were all on the basis of owners' risk, with the conditions which Parliament never intended should be applied to any rates between railway companies as carriers and traders. They were thus gradually driving the whole trade into this rate by making a great difference between companies' risk and owners' risk rates, in some instances the difference amounting to over 100 per cent.

In answer to Mr. Lloyd George as to the conditions wanted on owners' risk rate, and a definition of the risks traders should take under that rate, Mr. Monro gave as an instance the question of time limit, a most essential element in any trade in goods of a perishable nature; that under owners' risk railway companies should not be liable if trains were prevented by fog or accidents from making a reasonable delivery, but in cases where it was simply delay on their part, without any outside obstruction, they should be held liable, and not (as at present) deliver goods hours, and even days, after the usual recognised time, or lose them altogether, and still refuse all liability.

The reception given to the deputation was so encouraging that it is hoped that the grievances under which the trade suffers may shortly be remedied.

LAW NOTES.

STORY OF AN ORCHID.

At the Salford County Court (December 17), as we learn from a local paper, an action was brought to recover £75, the balance of price of an Orchid sold and delivered.

In June last plaintiff attended a sale of Orchids, and bought a number of plants. One of them proved to be a valuable Cattleya. The defendant eventually agreed to purchase the plant for £78. It was arranged that the payment should not be made in cash, but that the plaintiff should receive from the defendant Orchids to the like value in exchange, and he made his selection of the plants he was to receive. The defendant assured him that these plants were worth £100. When they got to his place, however, the plaintiff missed one plant he had selected, and upon making further examination he had reason to believe that only six of the 40 plants he had selected had been sent. Subsequent information confirmed his opinion that the plants had been changed, with the result that these proceedings were taken.

The plaintiff, in the course of his evidence, said that if the flower of the Cattleya he sold to defendant had been all white, instead of being slightly tinged with yellow, it would have been worth a thousand guineas.

A gardener in the defendant's employ, and afterwards in the plaintiff's employ, said that a number of the plants selected by the plaintiff were changed. Those which were sent would not be worth more than £10

His Honour: Did you think defendant was defrauding plaintiff?

Witness: Yes.

His Honour: And you helped him to cheat his friend—is that it?

Witness: Well, I——

His Honour: Very well.

Another gardener, also formerly in defendant's employ, spoke to a number of the plants having been changed.

The defendant's version of the case was a flat denial of the allegation that the plants had been changed. He said the only price ever mentioned in connection with the Cattleya he obtained from the plaintiff was £10.

His Honour said he entirely accepted defendant's evidence, and had no doubt that he had been perfectly honest in the transaction. The plaintiff had possibly been inspired to bring the action by listening to the tales of discharged servants. There would be judgment for the defendant with costs.

HOME CORRESPONDENCE.

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

THE BRITISH GARDENERS' ASSOCIATION.—The statement made by Mr. Watson in the *Gardeners' Chronicle* for November 24, that this association has dropped into the undignified position of an employment-registry office is undoubtedly the opinion of many who have become members. That there should be cause for such an opinion is certainly to be regretted, particularly after the able manner in which the matter had been taken up by Mr. Watson and other gentlemen on behalf of the profession, for the purpose of "mutual protection and assistance." After nearly two years' hard work, the number of members has reached nearly one thousand; surely everything should now be done by the Executive Council and the various committees to avoid a single reduction in this number: on the other hand, any suggestion that may possibly lead to the increase of numbers should be carefully considered. It is very clear by the present feeling, that a secretary with a London office (however necessary this may be) will not be able to keep its members in full sympathy with one another, particularly those residing in the provinces. In some of our towns the members of the British Gardeners' Association have been able to form a Mutual Improvement Branch, this will greatly add to the interest taken in the society generally. Other towns again already possess a Mutual Improvement Branch *so called*, but carried on, unfortunately, by "undesirables," who have no sympathy with the professional gardener, although amongst their number they may have a few highly-respected professional men (gardeners), who are "generously" allowed to place before them their life experiences by way of reading papers on various subjects, and answering the many questions put to them by the "tinkers" and "tailors" present. When a branch of this description is already formed it is a very difficult one to combat, owing to lack of support from the head office of the British Gardeners' Association, which is due to the diminutive subscription received from each member. It is very doubtful whether there is another society anywhere with a subscription of less than three farthings per week per member. What can be done with such a small sum? If our society is ever to be worth the name of a society, it was worth a larger subscription from the commencement, half of which sum, I think, should have been returned to the local secretaries in proportion to the number of members in their respective branches. This financial assistance would have enabled them to have held the annual meeting and also engaged a room for lectures, &c., at various times or whatever the local committee selected, or even provided funds for sending a representative to London for the annual general meeting to put forward any suggestions that might have been brought forward by the local branch. All this would increase the interest of individual members in the society as to the advantage of co-operation Under the present conditions this manner of working is entirely out of the question, owing to the expense which would be entailed thereby. It would, I feel, be impossible to obtain an increase of subscriptions locally, or, rather, by any local method; but no gardener with the objects of the society at heart would have objected to the subscription being large enough to have made the society a success. Meetings that have been held have been undertaken at the expense of a few generous members. [We are informed that the executive has paid the cost of meetings when asked to do so.—ED.] This surely is not as it should be. It certainly is a matter for immediate consideration by those in authority. It is not only an employment registry office in London that is required, but a real "live" gardeners' society, which is only possible to obtain by having the necessary financial assistance from headquarters, coupled with the assistance of educated professional gardeners with the love of their profession at heart, and a keen desire to help the younger members and those who have perhaps been less fortunate than themselves. This and this alone will cause a real interest to be felt in all local branches *H. R., Cardiff.*

RE-NAMING AMERICAN CARNATIONS IN ENGLAND.—Recently, in the *Gardeners' Chronicle, New Yorker* accused the English nurserymen of re-naming the new American Carnations on their arrival in this country. As a result of this, the New York *Florists' Exchange*, copied the remarks of *New Yorker*, and shortly commented thereon in the issue dated November 17. The following week, November 24, the enclosed note appeared in the American paper named, from which it will be seen, as I pointed out in the *Gardeners' Chronicle* at the time, that the name Mrs. W. T. Omwake was bestowed upon a sport of Enchantress in America by the introducer of the sport. That there is more than one pink sport of Enchantress is now quite obvious, and purchasers and sellers alike should therefore be made aware of the fact. The two varieties have already appeared at the Royal Horticultural Hall. *E. H. Jenkins, Hampton Hill.*

"RE-NAMING CARNATIONS IN ENGLAND.

"You are doing the Enghshman an injustice in claiming that Mrs. W. T. Omwake is a re-named Rose-Pink Enchantress. We introduced our sport of Enchantress through your columns only, under the name of Mrs. W. T. Omwake, and sold some stock in England. Our sport is not the dark rose-pink one, but is of a colour between those of Enchantress and the rose-pink sport. It is at its best the colour which Enchantress should be, as Enchantress in spring and fall is too pale. Unfortunately the past wet season had its influence on our sport, as well as on other sports, so that the colour does not come alike, some flowers shading darker, some lighter, which is also the habit of the parent itself; but by careful propagation the shades may be separated. But England was not guilty of re-naming an American variety in this case, as was claimed on page 602, issue of November 17. *Henry Eichholz, in the Florists' Exchange, November 24, 1906.*"

CHRYSANTHEMUM EXHIBITIONS.—Is the same amount of interest now taken by gardeners as was the case some few years back, when they used to attend the exhibitions in numbers to take down the names of the different varieties which were new to them, in order that they might form their own opinions as to the merit of particular varieties, that they might give each new or extra well-grown variety due consideration at the proper time when they might be ordering a few new varieties to replace some of the older ones? Is the present lack of interest caused through the principal classes having to be shown in vases, which is slowly but surely diminishing the number of varieties required, and will eventually lead to the raiser of new varieties being absent when there is no chance of obtaining further remuneration for his labours? This is being brought about by the exhibitor's decision to grow only about half the number of varieties, and to show in fewer classes than he has been accustomed to do. He is no longer able to arrange the flowers along the corridors or conservatory on boards after the show, each properly named, and thus to interest his employer in the different varieties and keep the flowers in good condition for a fortnight; and to decide which he will discard, and to receive some congratulations and encouragement for the extra labour which he has bestowed during the last year, This would mean good news to the Chrysanthemum Society and an order to the Chrysanthemum specialists or nurserymen. Some dissatisfaction is in the air. The employer has a right to expect that the flowers should arrive home in a presentable condition. It would serve a very good purpose to have the opinions of the present-day exhibitors through your columns. I think that a

few vases, evenly distributed through an exhibition, are a very great acquisition and break up the sameness of the shows. But while the chairman of the N.C.S. said he would like to see the boards driven from the show, I think such a proceeding would end in the exhibitor also being driven from the show. *L. K.*

BLANCARD FUND.—This fund will close on December 31 so that I can announce the result to the Mesdemoiselles Blancard on New Year's Day. There are still many names I should like to see on the list. Meantime I beg to acknowledge further donations amounting to £7 3s. 6d. *C. Harman Payne, Foreign Secretary N.C.S., 141, Wellmeadow Road, Catford, S.E.*

THE AUTHOR OF "THE GARDENERS' ASSISTANT."—Your correspondent *F. M.* is seriously in error in his statement on p. 402, that the gardens at Wrotham Park were, about the middle of the last century, under the management of Mr. Thompson, author of *The Gardeners' Assistant*. The Mr. Thomson who made the reputation of the gardens at Wrotham Park was the late Mr. William Thomson who founded the famous Tweed vineyard at Clovenfords, N.B., and who was previously at Dalkeith. The author of *The Gardeners' Assistant* was the Mr. Robert Thompson who practically all his life was associated with the old Chiswick Garden of the Royal Horticultural Society. I knew them both well. *Sabrina.*

APPLES FROM WREXHAM.—I am sending a few Apples for your inspection, hoping that they may be helpful to you in making recommendations for this district. Those enclosed are, perhaps, the most reliable of all the varieties grown here (upwards of 70). I may add to the list Mr. Gladstone, Beauty of Bath, Ecklinville Seedling, Stirling Castle, Tyler's Kernel, and Margil; although not big croppers, they are excellent in quality. The garden is a very exposed one, being sheltered on the north and north-east only, and we get most of our worst winds and storms from the south and south-west. One half the number of trees are planted on ground having a gentle fall to the south-west; the other half, on a similar slope, to the east, which is very unfavourable to the trees. The trees are given ordinary treatment. Spraying is never missed, which is a very important point, for notwithstanding the fact that we do not get the large size into the fruits that some do, we usually compare very favourably from the point of view of quality.—*Geo. Aitkens, Gardener P. L. Yorke, Esq., The Gardens, Erddig Park, Wrexham.* [Our correspondent has every reason to be proud of such apples as he has forwarded to us. They are of large size, good colour, and in every way satisfactory specimens of the particular varieties. We append the names of these, which are as follows: Alfriston, Bismark, Cellini, Cobham, Court of Wick, Court Pendu Plat, Cox's Pomona, Fearn's Pippin, Holland Pippin, Lady Henniker, Lane's Prince Albert, Lord Suffield, Mannington Pearmain, Margil, Mère de Ménage, Pomeroy, Pott's Seedling, Peasgood's Nonsuch, Schoolmaster, Tom Wood, Tyler's Kernel.—ED.]

PHEASANTS AND GUNNERAS, ORCHIDS, LILIUMS, &C.—I have been much interested in reading the letters that have appeared in these columns on this subject. In and around the wild garden and grounds here many hand-bred pheasants are put down each year, but in no instance have I observed them damaging Gunneras, although they have ample opportunity for doing so. Last spring we planted a quantity of Orchis foliosa by the bog garden; the crowns were well covered over, but the pheasants soon found them out and commenced to devour the crowns. All would have been destroyed had we not taken measures to protect them. Could it be the sense of smell that led them to the Orchis, as quite close to these were a lot of different varieties of Cypripediums which were not touched? I am well aware that pheasants are exceedingly fond of certain Liliums, and will dig down 6 inches for Lilium auratum, and this when the bulbs are at rest in the winter. Last spring they devoured a lot of bulbs of L. auratum and did not attempt to touch L. pardalinum, L. giganteum, L. canadense, or L. superbum, all of which were quite near L. auratum. Why did they select L. auratum? I wish they had been satisfied with a plainer diet. When Crocci commence flowering, yellow sorts—here at least—are the first to receive attention, flowers and roots being devoured; in loose soil they will clear them out 6 inches down in the ground. Another plant they seem fond of is the Marsh Marigold; this is taken when the plant is about to start into growth. We have to protect the Podophyllum. When Rhubarb commences to grow, these birds sometimes hollow out the crowns, but this does not happen every season. I wonder if it is only the hand-bred birds that are so mischievous? I do not object to them having a few Potatos or Turnips, but would like to draw the line at Liliums and other such treasures. *D. S. Melville, Pettalloch Gardens, Lochgilphead, N.B.*

SCHOOL GARDENING.—Whatever may be done in other counties, certainly to Surrey is due the credit of being the pioneer in the establishment of what are generally known as continuation school-gardens for boys who have left school, as, prior to the Education Act of 1902, by which the control of elementary education was given to the county councils, there were several hundreds of these evening-school-gardens in the county. With the advent of the new educational authority, a great change has taken place. Evening or continuation-school gardens for boys who have left school have given place to horticultural instruction in small gardens for the elder lads attending elementary schools, and now entirely under the charge of my friend and colleague, Mr John Wright, V.M.H., there are in Surrey some 65 blocks of such school gardens, and about 1,200 boys are being instructed in gardening in an elementary, yet practical, way. Let no one, however, assume that in this way it is hoped to raise up a race of professional gardeners. Horticulture is now recognised as a class subject, and earns a Government grant. Lessons last usually about an hour, are given twice a week, and the boys delight in the out-door occupation, because it brings a welcome change from the class-room desk—work of which there is far too much in schools. These boys learn how to use tools, and gain some information as to the nature of soils, seeds, and plants. They learn something of the requirements of vegetable existence, and their faculties are excited in a most useful direction. In a small way also they appreciate something of the discipline of labour. They have the benefit of instruction by either really good gardener-schoolmasters, or of some local gardener specially employed. There is also some economic sentiment clustering round school-gardening, because it is hoped, not unnaturally, that by thus early implanting in the young mind a love for gardening, and a taste for working the soil, our youth may be kept on the land rather than driven into overcrowded towns and cities. An old schoolmaster in Surrey quite recently said to me: "Being always fond of gardening, I long did my best in a small way to give the lads instruction in it, and so successful was I that whenever any lady or gentleman wanted a garden-boy, they sent to me for one. Many of those lads are now in good situations." That is indeed valuable testimony. Now, not only is all ground provided by the authority, but seeds, plants, manures, tools, and good instructors are all found for the lads. Mere ornamental gardening is not taught; something more practical is looked for, hence vegetable culture is the dominant feature, all the best-known kinds being grown. A few simple flowers also are added. At some schools where spare ground is available, a special plot is devoted to fruit-culture also. Here, in Kingston-on-Thames, where the authority is not of the county, but local, in consequence of the erection of some fine new schools, spare ground was available for school gardens. At the authority's request, I set out the area in 23 plots each 20 feet by 10 feet, making the boys set the line, drive the corner pegs, mark out the paths and plots, and cast the surface path soil on to the plots. That was the initial lesson, and a useful one. Then seeds and Potatos were obtained, and a gardener-instructor secured. Since then lessons have gone on twice a week in school days and once a week in the holidays. We are hoping next year to see a big county exhibition of school-garden-produce initiated. *A. D.* [This is an example which might with great benefit be followed in every country district. We recently published an illustrated account of similar school-gardens in Hertfordshire, formed under the direction of Mr. George Paul.—ED.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 11.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Messrs. Spencer Pickering, F.R.S.; G. Massee, Odell, Douglas, Bennett-Poe, Bowles, Worsdell, Hooper, Saunders, Gussow, and Chittenden, hon. secretary.

Dying Sempervivum.—Mr. SAUNDERS reported that he could find no reason for the death of the Sempervivum shown at the last meeting from Mr. O'BRIEN. "There were no signs of injury to the leaves by insects, nor did I notice any on the roots. I could see no trace of fungi. Perhaps the plants had been kept too damp?"

Cattleya fly.—Mr. SAUNDERS also reported that "the shoots of the Orchids shown by Mr. BOWLES were undoubtedly infested by the so-called 'Cattleya fly' (Isosoma orchidearum). It is not, however, a fly, but a hymenopterous insect belonging to the family Chalcidideæ, the members of which are parasitic on other insects as a rule. The genus Isosoma is placed in the sub-family Eurytomideæ, several members of which are found in gall-like swellings in the stems and shoots of various plants. I believe that it is still an open question whether these insects are the cause of the swellings, or whether they are parasitic on others which have formed them. This ought not to be a difficult question to answer if one had sufficient material to work upon, as the parasitic grub ought to be found at some time of its existence devouring the maker of the gall. Considering that the Chalcidideæ are nearly allied to the Cynipideæ who are undoubtedly gall makers, I am inclined to think that Isosoma is the real cause of the injury to Orchids. I cannot recommend any remedy but the very obvious one of burning, or in some other way destroying the infested shoots. The present would appear to be a very good time for doing this, as most of the insects are in the pupal state, just ready to emerge."

Oncidium Walueva.—Dr. MASTERS reported that he had examined this plant, referred to him at the last meeting. It was not a new plant, and he could find nothing sufficiently remarkable in its structure or history to entitle it to a Botanical Certificate. The following synonyms and references were quoted: Leochilus pulchellus, Cogniaux, *Fl. Brasil*, Orchid. v., p. 450, tab. xcv., fig. II. Waluewa pulchella, Regel, *Garten Flora*, xl., 1889, t. 1341; O'Brien in *Gardeners' Chronicle*, 1901, xxx., p. 365.

Lælio-Cattleya. This, also shown at the last meeting and referred to Mr. ROLFE, will be reported upon at the next meeting.

Root formation in Apples.—Mr. SPENCER PICKERING, F.R.S., showed roots of Apples, on Paradise stock, which had been grown in sand, and were remarkable for the extraordinarily numerous root fibres, some of which were thickened and of a very light colour. He also showed photographs of trees of the same age, and otherwise treated in the same way, but grown in a clay soil, where there was much less development of roots. In those grown in sand, however, the shoots formed were very short, while in those grown in clay they were much more vigorous. In reply to questions he stated that the addition of nutrient salts had had no appreciable effect upon the extent of the root system, nor upon the growth of the branches. The roots were not only of a peculiarly light colour, but were also very soft, the cortical tissue in some being greatly developed; no investigations as to the number, &c., of the root hairs had been made. It was suggested that the structure of the roots was due to the mechanical condition of the soil, and others suggested that the presence or absence of certain species of bacteria that possibly have considerable influence upon the proper action of roots might have caused the remarkable differences noted, but it was clear that much more experiment was needed before a full reason for the observed differences could be assigned.

Sweet Williams diseased.—Mr. CHITTENDEN reported that since the last meeting he had received and examined Sweet Williams from

Cobham, Surrey, badly attacked by the fungus Puccinia arenariæ. This fungus is exceedingly destructive to these plants, and apparently spreads to them from such weeds as the Chickweeds and Stitchworts, which are very frequently attacked by it. Affected plants are best removed and burned, as they never recover.

Effect of environment on plants.—Mr. SAUNDERS showed a very dwarf specimen of the Thorn Apple, Datura Stramonium, about 4 inches in height, bearing at its apex a single small fruit. The plant had been growing in a hedge.

Fungus on Chestnut.—Mr. WORSDELL showed a piece of the bark of Horse Chestnut bearing the small bright red warts typical of the presence of the fungus, Nectria cinnabarina, so common upon dead wood, but also spreading from dead wood to the living tissues of plants.

Malformed Orchids.—Dr. MASTERS showed a specimen, on behalf of Mr. MACBEAN, of Odontoglossum crispum, in which all the parts of the column which are usually confluent were developed in the form of free petals, resulting in the formation of a double flower. Mr. BENNETT-POE showed a specimen of Cypripedium in which the dorsal sepal was doubled. Dr. MASTERS will report upon this at the next meeting.

Hybrid Orchid.—Mr. DOUGLAS showed flowers of a hybrid Orchid raised from seed of Lælia harpophylla crossed with pollen of L. purpurata, the only sign of the latter in the colour being a small purple spot near the end of the labellum. Dr. MASTERS will report upon it further at the next meeting.

Gooseberry mildew (Sphærotheca mors-uvæ).—A specimen of the American Gooseberry mildew from Worcestershire was shown by Mr. GUSSOW. The specimen showed an abundance of the mildew and its typical "peritheciа" upon the younger parts of the branches. Mr HOOPER said the disease did such great damage in Canada and in parts of the United States, that the European Gooseberry could not be grown there with any prospect of a crop, and its cultivation had been practically abandoned in America. He brought forward the following resolution concerning the disease: "That it is most desirable that the Board of Agriculture should take immediate steps to promptly submit all evidence obtainable on the matter of the American Gooseberry-mildew to a small skilled committee, for a decision at once as to the danger of the disease spreading, and other important facts in the matter." The resolution, however, was not seconded, and therefore lapsed. Mr. MASSEE remarked that he had visited the Evesham district, and had found the mildew on Gooseberries in three distinct places, and in one where the bushes had been growing in a damp and sheltered place, the grower said, when it was pointed out to him, he had known the disease for the past thirty years, and he had not imported any Continental or Irish grown Gooseberries for that period. He thought it quite possible that the disease had existed in the country for a considerable time, and that since the spores were so minute, it was quite likely that they would be carried for a great distance by the wind or with merchandise of various kinds, although the importation of the plants from Ireland and the Continent should be prohibited. Other members concurred, and it was pointed out that the fungi found in a certain country frequently attacked newly imported plants with increased vigour, rendering their cultivation practically impossible; this had apparently been the case with this fungus in Canada. It was pointed out by Mr. GUSSOW that in a certain year in Germany the Cherries were very badly affected by the disease, due to Monilia fructigena; but this disease had not appeared to an injurious extent in succeeding years upon the Cherry, thus showing that a number of circumstances, acting together, frequently affected the prevalence or otherwise of any fungoid attack.

ROYAL SCOTTISH ARBORICULTURAL.

DECEMBER 8.—The annual general meeting of the Aberdeen branch of this society was held in the Aberdeen University buildings on the above date. There was a good attendance of the members, and Mr A. M. Gordon, of Newton, president of the branch, occupied the chair.

Mr. Robert Scott, secretary and treasurer, submitted a financial statement, showing a substantial balance in favour of the society.

Later in the evening, Dr. A. W. Borthwick, Royal Botanic Gardens, Edinburgh, read a paper on "A Visit to the Forests of Kelheim, on the Danube."

SOCIETY OF ARTS.

DECEMBER 12.—A paper on "Fruit Growing and Bird Protection" was read on the above date by Mr. Cecil H. Hooper, a member of the council of the National Fruit Growers' Federation.

Mr. Hooper said that agriculturists and fruit-growers admit that birds, as a class, are more beneficial than they are injurious to the cultivator. Yet many of the most common and injurious insects to fruit are eaten sparingly and by few species of birds, whilst there are others, he believed he was correct in saying, were eaten by no bird, but were most detrimental to the plant, e.g., red spider, Apple sucker, Black Currant mite.

With the introduction of spraying, grease banding, and other devices to prevent or destroy insects, fruit-growers are less dependent on birds for their protection from injurious insects than they were, say, 50 years ago; yet the damage done by birds is more severe than at that date. The increase and spread of fruit-cultivation probably favours the increase of birds that devour fruit and fruit-buds, whilst the close preservation of game destroys the birds, which act as a natural check on their undue increase, and favours other birds living in the woods, such as the bullfinch and wood pigeon, which are injurious to the fruit-grower and farmer, yet are not interfered with by the gamekeeper.

Again, the many advantages possessed by the house sparrow has enabled it to multiply inordinately to the detriment of other and more useful birds.

Among the natural causes influencing the increase or decrease of certain birds are mentioned: (1) Migration, not only from one country to another, but from different parts of our own country; (2) the character and habits of the bird; (3) the quantity of food available; (4) the number of young the birds rear yearly; (5) the capability of the bird to withstand adverse conditions, such as long continued snow and frost.

Again, there is the possibility of change of habit in birds, influenced perhaps by other birds eating the food the first bird was accustomed to, and therefore being compelled to adopt a new food; it is suggested that the starling, by taking the food of the rook, urges on the rook to take more corn and birds' eggs to make up for it.

The general opinion is that the starling and blackbird have extended their menu in the way of food, and add to Cherries, Red Currants, and Strawberries, fruits such as Plums, Pears, and Apples, Mulberries, &c., and the blackbird has started eating Tomatos.

As to the effect of the influence of man. Owing to children being kept at school longer, the fear of the policeman, and the kind and humane teaching at many village schools, children do not take anything like the number of eggs from the hedges and elsewhere that they used to before the passing of the Wild Birds' Protection Act.

Again, with men and lads, the more rigid exaction of a gun license has lessened indiscriminate shooting, which probably chiefly affected the more common birds, such as sparrows, thrushes, blackbirds, and the smaller birds generally.

The Wild Birds' Protection Act allows a landowner or tenant of land, or, anyone authorised by either, to shoot most of the commoner birds detrimental to the garden and the farm, but the public, unless owning or occupying land, is not allowed to shoot any bird. The scheduled birds, including the rarer birds, no one is allowed to shoot, on pain of a fine and confiscation of the bird.

With regard to eggs, most of the commoner birds' eggs are not protected, and therefore may be taken by anyone, but on the scheduled birds nets, decoys, &c., may be forfeited.

It is illegal to snare scheduled birds, and nets, decoys, etc., may be forfeited.

Anyone may demand the name of any person shooting at a scheduled bird.

The pole trap, a cruel trap used by gamekeepers to catch owls, hawks, jays, &c., is prohibited, with a fine of £2 for first offence, £5 for second.

The writer of the paper pointed out that the Wild Birds' Protection Act should be summarised instead of having to refer to six brief Acts of Parliament in order to know what a man or boy may do and what he is forbidden to do.

Mr. Hooper then asks: Is it justifiable to decrease the number of injurious birds? and points out that it is our duty to encourage the beneficial birds and to lessen the numbers of those which are injurious in the most merciful way practicable.

The lecturer went on to deal with the habits and food, &c., of partially injurious birds, such as the house sparrow, bullfinch, blackbird, starling, missel and song thrushes, chaffinch, greenfinch, hawfinch, lark, rook, jackdaw, magpie, jay, wood pigeon and stock dove, and then remarked on the birds more or less useful to the fruit-grower, including blue tit, great tit, cole tit, long-tailed tit, robin, hedge-sparrow, redstart, tree creeper, pied wagtail, wren, nuthatch, spotted flycatcher, whitethroat, blackcap, garden-warbler, cuckoo, wryneck, the woodpeckers, plover, nightjar, kestrel, and sparrow-hawks, barn and tawny owls.

As a summary, in conjunction with Mr. W. E. Collinge, he strongly advocated the most stringent measures to decrease the numbers of the house sparrow, wood pigeon, and stock dove, as being distinctly injurious to cultivation generally. He is in favour of taking the eggs of the chaffinch, greenfinch, and bullfinch, and in fruit-growing districts considers it necessary to decrease the number of blackbirds and starlings, and more reluctantly of missel and song thrushes, also of the rook in districts where it interferes with fruit, as in Scotland with the Raspberries. It is the duty of those who own woods to check the undue increase of wood pigeons, and of those who own rookeries to shoot a proportion of the young rooks to keep the numbers stationary.

In the case of hawks (especially the kestrel) and of owls (particularly the barn owl), swallows, flycatchers, wagtails, hedge sparrows, redstart, and all such birds, no effort should be spared to protect and encourage them, and every inducement should be offered to them to increase in number.

NATIONAL POTATO.

DECEMBER 13, 14.—The third annual exhibition of this society was held in the Royal Horticultural Hall, Westminster, on these dates, and three weeks later than the exhibition of last year. Whether due to this change of dates or not, the show was certainly smaller than the preceding ones, especially noticeable being a falling off in the nurserymen's exhibits, and among the competitive classes green baize was pretty conspicuous. However, there was plenty of material to satisfy the most exacting, and if the show lacked somewhat in quantity, it was not behind its predecessors in quality.

A Potato show, by reason of the unavoidable repetition of varieties, and the total lack of anything decorative in dishes of Potatos, does not appeal to many others than those who have an interest in the exhibit, and it is not surprising that the attendance of the general public was very meagre, although this was undoubtedly influenced by the weather conditions, which were extremely unfavourable.

A conference was held in the lecture room at 3 p.m. on the opening day, when Mr. H. Henshaw, of the Cambridge University Farm, Impington, read a paper on "Facts about Change of Seed." Illustrative of his lecture, Mr. Henshaw showed an interesting exhibit, which included Chilian and German varieties; first and second year's seedlings; Solanum Commersoni, showing the difference between its fruits and those of Solanum tuberosum; tubers from the Black Congo; some remarkable variations shown in the first generation from a single cross, &c.

Another interesting exhibit was shown by Mrs. HANCOCK, of Crelash, Horeham Road, Sussex, in samples of Solanum Commersoni (the swamp potato). Whilst the ordinary Potatos in adjoining plots in her garden had suffered from frost and disease, this variety remained unmjured.

Mrs. NOBLE, Park Place, Henley-on-Thames (gr. Mr. T. J. Powell), contributed an exhibit of new Potatos raised from retarded tubers without the aid of artificial heat.

Cookery competitions were held in co-operation with the Universal Cookery and Food Associa-

tion, 329, Vauxhall Bridge Road, London, S.W. Mr. B. Ashton (gr. to the Rt. Hon. Earl LATHOM, Lathom House, Ormskirk) was the most successful exhibitor: he secured the Llewelyn Cup, offered for the best exhibit in the show, the Carter-Findlay Cup, and 11 other prizes. In the evening the annual dinner was held at the Hotel Windsor, under the presidency of Mr. G. Massey, of Spalding. The dinner was followed by the annual meeting.

CLASSES OPEN TO TRADE GROWERS.

Eighteen varieties, distinct.—The best exhibit in this important class was staged by Mr. R. W. GREEN, Wisbech, Cambridgeshire, who showed a representative collection of most types in well-matched, clean-skinned tubers of such varieties as Bountiful, Duchess of Cornwall, The Factor, Sir John Llewelyn, Mr. Bressee, Blue Bell, &c. Mr. HENRY SCOTT, Warminster, Wilts., followed with tubers of a rich brown skin—evidence of soil influence, and admirable samples for culinary purposes. His collection included Warrior, The Factor, Snowdrop, Sir John Llewelyn, King Edward VII., &c.

Nine varieties, distinct.—Only two growers contested in this class, and here Mr. GREEN was beaten by Mr. WILLIAM DEAL, Brooklands, Kelvedon, with a meritorious exhibit of not over large tubers, of such kinds as Windsor Castle, Purple Eye (a very pretty Potato), Superlative, Gold Mine, &c.

TRADE GROWERS EXCLUDED.

Greater competition was seen in these classes than in the preceding ones, and in that for 12 distinct varieties eight exhibits were staged. The Rt. Hon. Earl of LATHOM, Ormskirk (gr. Mr. Ben Ashton), was successful with large tubers, that were evenly selected, and with spotless skins, and shallow "eyes." Empire, Queen of the Veldt, Empress Queen, and Eastern Planet are some of his best examples. 2nd, Mr. ALEX. LAWSON, Annfield, Kingskettle, N.B., whose exhibit was one of the finest in the show in all points save size. They were the acme of external quality, the dish of King Edward VII. being awarded a silver medal as the best dish of coloured Potatos in the Amateurs' and Cottagers' classes. Mr. Ambrose (pale rose), Eldorado, Ruby Queen, Empire, and Eightfold may also be instanced. 3rd, Earl SPENCER, Althorp Park, Northampton (gr. Mr. Silas Cole), with large tubers.

Six varieties, distinct.—There were also eight exhibits in this class, and Mr. ASHTON was again to the fore with similar Potatos as won 1st honours in the preceding class. He was followed by Mr. JOHN GEMMELL, Flakefield, Chapelton-by-Hamilton, N.B. 3rd, Mr. THOS. ANDERSON, Darvel, Ayrshire.

COTTAGERS' CLASSES.

Two classes were provided for cottagers, the larger for six varieties, and the other for three varieties. Mr. COLEMAN, 13, Hunter's Street, Buckingham, won the 1st prize in both classes with popular varieties, and in the larger class he was followed by Mr. F. G. TYLER, Milton, near Sittingbourne, Kent. Four and nine entrants respectively contested.

CUP CLASSES.

As stated, Mr. BEN ASHTON won both the Carter-Findlay and the Llewelyn Cups, which he secured with his exhibit in Class 7, of 12 distinct varieties, 9 tubers of each variety. The Carter-Findlay trophy, which is of the value of £50, was offered for the first time last year, when Mr. ASHTON was successful, and he only requires to win it again next year for it to become his absolute property, but the wins must be consecutive. He showed Evergood, Empress Queen, Empire, Snowball, Royalty, Great Scott, Royal Kidney, Advancer, Monarch, Goodfellow, and Northern Star. Mr. THOMAS STEWART, Annfield, Fife, was awarded the 2nd prize.

AFFILIATED SOCIETIES.

A class was provided for societies affiliated to the National Potato Society, the requirements being six distinct varieties, of any shape, to include four white and two coloured kinds. Four societies were represented, the successful one being the CAMBRIDGESHIRE HORTICULTURAL SOCIETY, Cambridge (sec. Mr. Arthur Matthews).

POTATOS FOR FLAVOUR.

A class was provided for six varieties of Potatos, specially selected for their flavour, to include at least three of the following: Factor, Duchess of Cornwall, Royal Kidney, Windsor Castle, Sir John Llewelyn, and Snowdrop. The winning exhibit, which contained the whole of these varieties, was staged by Mr. W. COLEMAN, 13, Hunter's Street, Buckingham. 2nd, Mr. SILAS COLE.

An interesting class was that for the best cwt. of London market-size tubers, to be shown as dug, the variety to be named. Factor, shown by Mr. HENRY SCOTT, Warminster, Wilts., was placed 1st, with Southern Queen, grown by Mr. F. G. CRAMPTON, Gate House, Sissinghurst, 2nd.

The single dish classes were well contested, and for the variety Up-to-Date there were as many as 24 contestants. The principal winners were Messrs. ALEX. LAWSON, SILAS COLE, J. GEMMELL, and F. G. CRAMPTON.

NON-COMPETITIVE EXHIBITS.

Exhibits of Potatos were displayed by Messrs. WILLIAM DEAL, Kelvedon (Large Silver Medal); GEO. MASSEY & SONS, Market Place, Spalding, Lincolnshire (Silver-Gilt Medal); T. A. SCARLETT, Edinburgh, seed tubers; HENRY SCOTT, Boreham Road Nurseries, Warminster (Silver Medal); J. W. BOYCE, Welney, Wisbech (Silver Medal); W. P. LAIRD & SINCLAIR, LTD., Dundee; JAMES GARDINER, Perth, N.B.; JAMES GRAY, Glasgow, seed tubers (Silver Medal); W. DAVIE & CO., 38, Market Street, Haddington, N.B. (Silver Medal); EDWARD STEWARD, 57, Carrington Street, Nottingham; COLIN MACPHERSON, Carnousie, Scotland, seedling tubers; R. W. GREEN, Wisbech (Large Silver Medal); DOBBIE & CO., Mark's Tey, Essex, and Rothesay, N.B., 27 varieties of their own introduction (Silver Gilt Medal).

Messrs. J. CHEAL & SONS, Crawley, exhibited a large display of miscellaneous fruits and vegetables, including many varieties of Potatos (Silver Medal). Mr. HENSHAW was awarded a Silver-Gilt Medal for his interesting exhibit of seedlings and species.

THE DINNER.

At the close of the show on the first day, the members' dinner was held at the Hotel Windsor, Victoria Street. Councillor G. Massey, of Spalding, presided. The chairman proposed "Success to the Potato-growing Industry." He coupled with the toast the names of Mr. W. Cuthbertson, of Marks Tey, and Mr. W. Davie, of Haddington. The annual meeting was subsequently held, Mr. G. Gordon being in the chair. The preliminary statement showed that the exhibition, financially, had been disappointing. The meeting was adjourned until a detailed balance-sheet could be prepared, and it was also decided to defer any arrangements for the next show until after the members' meeting had been held.

ROYAL BOTANIC.

DECEMBER 14.—A meeting of the Fellows of the Royal Botanic Society was held on the above date in the club rooms of the society's gardens, at Regent's Park, Dr. Granville Bantock presiding. The proceedings were of a heated character. Prebendary Barker had submitted eight questions, to which Mr. J. R. Diggle, on behalf of the council, replied. The first question had relation to the resignation of members of the council. The answers to the second and third questions were that seven Fellows had been appointed to fill vacancies on the council. The fourth question was whether the liabilities of the society, amounting on December 31, 1905, to £34,000, had increased or diminished since that date, and the answer was that on December 1, 1906, the liabilities had been reduced by £1,500. As to £6,000 of the debentures, it was stated that a redemption policy had been taken out, and that they were being automatically provided for. In reply to the remaining questions, the council stated that the raising of the subscription was only one of five suggested means of increasing the income of the society; they denied that the proposal had been twice rejected by the Fellows, the fact being that on each occasion a majority had declared in favour of the increased subscription. This question and that of the appointment of a superintendent were both matters which would arise in the course of the proposed conference. The council denied that they had brought the society to the verge of ruin, or that the Fellows had on a vote on the last three occasions rejected the council's proposals. Considering how recently the present council had been formed, and upon a review of the whole facts of the case, the council saw no necessity for asking the Fellows to pass judgment upon their action till the date of the annual general meeting in August next. Both Mr. Rubinstein and Prebendary Barker expressed dissatisfaction with the replies given, and the latter proposed a resolution that the Fellows had no confidence in the council. This was seconded, but the chairman ruled it out of order. A heated discussion ensued. A proposal on the part of members of the reform party (who were termed by their opponents not "reformers," but "agitators") fell through, and the meeting, which lasted nearly two hours, terminated without practical result, although Prebendary Barker repeatedly called upon the council to declare their policy.—*Condensed from the Times.*

GLASGOW SEED & NURSERY TRADE ASSOCIATION.

DECEMBER 15.—The second annual dinner of the above association was held on this date under the presidency of Mr. W. Leighton, and with satisfactory results. Several friends were present from Edinburgh, who were welcomed by the chairman in his opening speech.

Mr. Hugh M. Mackie, secretary of the West of Scotland Horticultural Society, in proposing "The Seed and Nursery Trade," said it was one of the oldest and most honourable of all businesses that existed. Mr. A. N. Hunter, of Messrs. Austin and McAslan, replied on behalf of the trade. Mr. Williamson, of the firm of Messrs. Williamson, Cremmell and Co., proposed "Kindred Societies." A collection taken at the meeting on behalf of the Royal Gardeners' Orphan Fund amounted to £3 5s.

NATIONAL DAHLIA

From the report of the committee for the year 1906, we learn that the past season was not a favourable one for Dahlia growing. During July and August in the south there was a long-continued drought, and in the north an excess of heavy rains, while the unprecedented hot spell just before the show was universal over the whole country.

In spite of these adverse conditions, a magnificent display was made at the annual exhibition, held on September 6 and 7, at the Crystal Palace.

Some 90 new varieties were submitted to the inspection of the judges, who awarded certificates to eight of them. On September 25 a meeting of the committee was held at the Horticultural Hall, Vincent Square, on the occasion of the fortnightly show of the Royal Horticultural Society. Seven certificates were awarded to new varieties. The total number of certificates awarded to new varieties in 1905 was 32, and in the present year 15.

The number of new members joining the society continues to increase, and was 38, as compared with 32 in the previous year. This increase in membership, however, has been partly neutralised by resignations and deaths.

The publication of the official catalogue and culture guide and of the yearly supplements appeals to all classes of Dahlia-growers, whether exhibitors or not.

By the courtesy of the Royal Horticultural Society, raisers of garden Cactus Dahlias are invited to send plants to Wisley for trial. A joint committee of this society and of the Royal Horticultural Society will visit Wisley during the flowering season for the purpose of granting "Garden Cactus" certificates to those varieties that are considered suitable. By this arrangement the merits of new varieties suitable for garden decoration should become known quickly. The financial statement shows a small balance on the right side, but the formation of a reserve fund is recommended. This year it has been impossible to pay all the prize money owing to the delay of the Crystal Palace Company in paying their promised grant.

LINNEAN SOCIETY.

DECEMBER 6.—Professor W. A. Herdman, F.R.S., president, in the chair. The Rev. H. Purefoy FitzGerald, F.L.S., exhibited specimens and a water-colour drawing of Stegesbeckia orientalis, Linn., which has been recently described as a valuable external curative agent in skin diseases. He had been supplied by M. Sers of Reunion with seed, and the produce has been sent to a dermal hospital for trial. The author has been unable to find that the plant has hitherto been recognised as a therapeutic agent of value, and would welcome any information which Fellows of the Society might be able to supply.

Mr. A. O. Walker, F.L.S., exhibited cut specimens of Chosya ternata, which were now in full flower in his garden near Maidstone. These bushes had flowered normally last May, but the present flowering he attributed to the drought of last season acting as a resting period to vegetation, which is usually performed by the cold of winter.

Dr. A. T. Masterman, F.L.S., showed an abnormal specimen of the common dab with three eyes, which had been obtained from the Dogger Bank.

The first paper read was by Professor A. J. Ewart, F.L.S., on "The Physiology of the Museum Beetle, Anthrenus museorum (Linn.), Fabr." The mischief wrought by this species in the National Herbarium at Melbourne is great, and is only kept in check by the systematic use of a chamber impregnated by the vapour of carbon-bisulphide in which the plants are placed for several days at a time. The use of corrosive sublimate is not advisable owing to the grave danger to health in a dust-forming atmosphere.

The most remarkable feature of the larvæ is their power of feeding on dry material with less than nine per cent. of water; and yet these larvæ exhibit the usual amount in their structure, averaging 70 per cent. The author suggests that the water may be chemically derived from decomposition of the carbo-hydrate food they consume. Bacteria are present in abundance in the alimentary canal of these grubs, and oxidise the carbon of the food where no transpiration of water is possible.

The second paper was read by Mr. E. R. Burdon, F.L.S., entitled "Note on the Origin of the name Chermes or Kermes." He summarised the contents of his paper thus: "It will thus be seen from the foregoing that the existence of the same generic name in two families of the Hemiptera is due to the following causes: (1) That the dye-insect of the Oak, Quercus Ilex, Linn., had been known since the Arab conquest of Spain by the popular name of Kermes all over the South of Europe. (2) That Linnæus, apparently unaware of this fact, put the Kermes dye-insect into the genus Coccus, and employed Chermes as the generic name for another group of insects, amongst which he placed the Spruce gall-insect. (3) That Geoffroy, objecting to this misapplication of a well-known popular name, used Chermes as the generic name for the dye-insect which Linnæus called Coccus. (4) That Botard used the name for the same insects as Geoffroy, but spelt it Kermes. (5) That the majority of workers at the Spruce gall-insects have retained the Linnæan name of Chermes, and at the same time Coccid authorities have naturally continued to use the name Kermes for the insect which had popularly been so called from early times."

The author concludes that, in view of the wide acceptance of both Chermes and Kermes, any alteration would only make confusion worse confounded.

MA PRATIQUE DE LA CULTURE MARAICHERE.

M. J. CURÉ (Paris) publishes, under this title, a handbook on market-gardening in the open and under glass. The subjects dealt with include the consideration of the soil, manures and hot beds, choice of seeds, tools and accessories, calendar of operations, Mushroom growing and injurious insects. The book is illustrated and contains an index, and is likely to be very serviceable to market-gardeners and others to whom the French language offers no bar. The book is published by the Librairie Agricole, Rue Jacob 26, Paris.

MARKETS.

COVENT GARDEN, December 19.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Azalea Fielderi, per dozen bunches	3 0	6 0
— mollis, p. bch.	1 0	1 6
Anemones, per dz. bunches	2 6	3 0
Ponvardia, per dz. bunches	4 0	6 0
Calla æthiopica, per dozen	5 0	6 0
Camellias, white, per dozen	2 0	3 0
Carnations, per dozen blooms, best American varieties	2 0	4 0
— smaller, per doz. bunches	6 0	9 0
Cattleyas, per doz. blooms	8 0	10 0
Christmas Roses, doz. blooms	1 0	2 0
Chrysanthemums, specimen blms.	4 0	9 0
— per dz. blooms	1 6	4 0
— small blooms, per doz. bnchs.	3 0	9 0
Daffodils, per bch.	1 0	1 6
Eucharis grandiflora, per doz. blooms	3 0	4 0
Gardenias, per doz. blooms	2 0	3 0
Gypsophila elegans, dz. bchs.	2 0	3 0
Heather, white, pr. doz. bunches	3 0	6 0
Hyacinth (Roman), p. dz. bunches	6 0	12 0
Lilac, white, p. bch.	4 0	5 0
Lilium auratum	3 0	4 0
— lancifolium, rubrum and album	2 0	3 0
— longiflorum	1 0	6 0
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality	12 0	18 0
Marguerites, white, p. dz. bunches	2 0	3 0
— yellow, per dz. bunches	2 0	3 0
Mignonette, per dz. bunches	2 0	3 0
Narcissus, paper white, per doz bunches	1 6	2 6
— English	2 0	3 0
— Soleil d'Or, per dozen bunches	3 0	0
Odontoglossum crispum, per dozen blooms	2 6	3 0
Paneratiums, dz. fls.	3 0	4 0
Pelargoniums, show, per doz. bunches	3 0	5 0
— Zonal, double scarlet	4 0	5 0
Poinsettias, per dz.	6 0	10 0
Primula (double white), dozen bunches	4 0	6 0
Ranunculus, per dozen bunches	6 0	9 0
Roses, 12 blooms, Niphetos	2 0	3 0
— Bridesmaid	2 0	3 0
— Kaiserin A. Victoria	2 0	5 0
— Caroline Testout	2 6	4 0
— C. Mermet	2 6	5 0
— Liberty	1 0	6 0
— Mad. Chatenay	3 0	6 0
— Mrs. J. Laing	2 6	3 0
Statice, p. dz. bchs.	4 0	6 0
Stephanotis, per dozen trusses	4 0	6 0
Tuberoses, per dz. blooms	0 4	0 6
Tulips, per dozen	1 0	1 6
Violets, per dozen bunches	1 6	3 0
— Parma, p. bch.	2 0	3 6

Cut Foliage, &c.: Average Wholesale Prices.

Adiantum cuneatum, doz. bun	4 0	6 0
Ampelopsis leaves, p. dz. bunches	1 6	2 0
Asparagus plumosus, long trails, per doz.	1 0	8 0
— — medium, bunch	1 6	2 0
— — short spray per bunch	0 6	0 9
— Sprengeri	0 6	1 0
Berberis, p. bunch	2 0	2 6
Croton leaves, per bunch	1 0	1 6
Cycas leaves, each	1 6	2 0
Fern, English, p. dozen bunches	2 0	3 0
— (French), doz. bunches	2 0	4 0
Hardy foliage (various), per dozen bunches	3 0	9 0
Ivy leaves, bronze	1 6	2 0
— long trails per bundle	1 0	2 0
— short green, doz. bunches	2 0	3 0
Moss, per gross	1 0	5 0
Myrtle, doz. bchs.	2 0	5 0
Pernettya, with berries, per bunch	0 9	1 0
Smilax, doz. trails	2 0	3 0

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

Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, per dozen	4 0	6 0
— larger	9 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	18 0	30 0
— variegated, dz.	30 0	42 0
Asparagus plumosus nanus, doz.	6 0	9 0
— Sprengeri, doz.	8 0	10 0
— tenuissimus per dozen	8 0	10 0
Azaleas (Indica varsd.), per doz.	30 0	42 0
— mollis, each	3 6	10 6
Begonia Gloire de Lorraine, p. dz.	8 0	12 0
— Turnford Hall, per dozen	8 0	10 0
Bouvardias, per dz.	4 0	6 0
Callas, per doz.	12 0	18 0
Chrysanthemums, best, per doz.	12 0	21 0
smaller, per doz.	6 0	9 0
Clematis, per doz.	8 0	9 0
— in flower	9 0	12 0
Cocos Weddelliana, per dozen	9 0	18 0
Crotons, per dozen	12 0	30 0
Cyclamen, per dz.	10 0	15 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz	4 0	5 0
Dracænas, per doz.	9 0	24 0
Erica cafira	9 0	12 0
— hyemalis, p. dz.	12 0	15 0
— gracilis, p. dz.	10 0	15 0
— melanthera, dz.	9 0	18 0
Erica nivalis	18 0	24 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	7 0	10 0
— in small and large 60's	16 0	25 0
— in 48's, per dozen	4 0	10 0
— in 32's, per dozen	10 0	18 0
Ficus elastica, per doz.	8 0	12 0
— repens, per doz.	4 0	6 0
Hyacinths, per dz.	12 0	18 0
Kentia Belmoreana, per dozen	12 0	18 0
— Forsteriana, per dozen	12 0	21 0
Latania borbonica, per dozen	12 0	18 0
Lilacs, each	1 0	10 0
Lilium longiflorum, per dz.	18 0	30 0
— lancifolium, per dozen	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0
Marguerites, white, per dozen	6 0	9 0
Orange trees in fruit, each	3 6	5 0
Physalis Franchetti, each	1 6	3 6
Poinsettias, per dz.	9 0	12 0
Primulas, per doz.	4 0	5 0
Selaginella, dozen	4 0	6 0
Solanum capsicastrum, per doz	5 0	12 0
Spiræa japonica, per dozen	9 0	15 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples, Nova Scotian:		
— Russets	18 0	20 0
— Greenings	12 0	15 0
— Starks	14 0	15 0
— Baldwins	14 6	16 0
— Blenheims, per barrel	20 0	21 0
— Emperors, per barrel	12 6	14 0
— Ribstons, per barrel	18 0	20 0
— King of the Pippins	16 0	18 0
— English, ½ bus.	3 0	10 0
— English, per bushel (46 lbs. to 50 lbs.)	6 0	7 0
— Newtown Pippins, per case	10 6	16 0
Canadian, per barrel:		
— Russets	21 0	23 0
— Greenings	12 0	14 0
— Ben Davis	13 0	14 0
— Baldwins	14 0	15 0
— U.S.A., per barrel	21 0	35 0
Bananas, bunch:		
— West Indian, red	7 6	—
— No. 1	6 6	7 6
— No. 2	5 6	6 0
— Extra	8 0	10 0
— Giants	10 0	12 0
— Jamaica	4 6	6 0
— Loose, per dz.	0 9	1 6
Cranberries, per case	12 0	—
Custard Apples, per dozen	4 0	10 0
Dates (Tunis), doz. boxes	4 6	—
Figs, Italian, box	0 6	0 9
— French, p. box	0 6	0 8
Grape Fruit, case	6 6	10 0
Grapes (English), — Black Hamburg, per lb.	0 6	1 0
— Alicante, p. lb.	0 8	1 2
Grapes, Gros Colmar, per lb.	0 8	2 0
— Muscat, per lb.	1 9	1 0
— Almeria, barrels	12 0	18 0
Lemons:		
— Messina, case	9 6	17 6
Lychees, per box	1 0	1 2
Mandarines, case	0 8	1 6
Mangos, per dozen	3 6	6 0
Nuts, Cobnuts, per doz. lb.	6 0	6 6
— Almonds, bags	54 0	—
— Brazils, new, per cwt.	65 0	70 0
— Barcelona, per bag	32 6	—
— Walnuts, per Grenoble bags	4 6	5 6
— Cocoa nuts, 100	10 6	13 6
— Chestnuts, Redon bags	10 0	11 0
— Italian bags	13 0	15 0
Oranges, per case:		
— Valencia	9 6	31 0
— Jamaica	10 0	13 6
Pears (English), ½ sieve	2 0	3 6
— English, per bushel (56 lbs.)	4 0	7 0
— Doyenné du Comice, p. dz.	6 0	12 0
— American, barrels	20 0	—
— French, Williams, boxes	6 0	10 0
— French, Glouts, crates	5 0	5 6
— Californian, pr. case	12 6	—
Persimmons, per box	1 6	2 0
Pineapples, each	3 6	6 6
Plums (English), ½ sieve (28 lbs.)	7 0	8 0
— French, box	0 8	1 3
— French, ½ sieve	3 0	—
— Californian, boxes	6 0	8 0

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen	2 6	—
Asparagus, Sprue French, bundle	0 6	0 8
— Paris Green, bundle	3 6	4 3
Beans (French), packet	21 0	35 0
— Jersey, per lb.	1 0	2 0
— Hanlots, per box	1 0	—
Beetroot, bushel	1 3	—
Brussels Sprouts, per ½ bushel	1 0	1 6
Cabbages, per mat (about 30 to 40 heads)	2 6	—
— red, per dozen	2 0	
Carrots, French pad	3 0	
— per bag, unwashed	1 3	1 9
— washed	2 6	
Cauliflowers, p. tally	11 0	12 0
Celeriac, per doz.	1 6	—
Celery, p. dz. bdls.	8 0	9 0
Chicory, per lb.	0 3	—
Chow Chow, p. dz.	3 0	—
Cucumbers, p. doz.	6 0	12 0
Endive, per dozen	1 0	1 6
Horseradish, foreign, per dozen bundles	15 0	—
Leeks, 12 bundles	1 6	—
Lettuces (French), per dozen	0 9	1 0
— French Cos	2 6	3 0
Mint, per dozen	3 0	4 0
Mushrooms (house) per lb.	0 10	1 0
— Buttons, per lb.	1 0	—
Mustard and Cress, per dozen pun.	1 0	1 6
Onions (Valencia), case	6 0	
— Egyptian, bag	3 6	4 0
— pickling, per bushel	2 0	2 6
— French, ½ bag	2 6	
— Dutch, bag	3 3	
Parsley, 12 bunches	1 6	2 0
— ½ bushel	1 6	1 9
Parsnips, per bush.	1 3	
— per bag	2 6	
Potatos (French), crates, per lb.	0 3	0 4
Radishes (French), per dozen	1 6	
Rhubarb (English), per dozen	1 9	—
Salsafy, per dozen bundles	3 6	—
Savoys, per mat (holding about 30 to 40)	2 0	—
Seakale, doz. pts.	16 0	18 0
Tomatos: — Canary, per bundle	14 0	18 0
Turnips, per cwt.	2 6	—
— bags	2 6	—
— washed, cwt.	2 9	—
Watercress, per doz. bunches	0 4	0 6

REMARKS. Cauliflowers are dearer, and prices for Jersey Beans are also firmer. Muscat Grapes are scarce, but Alicante and Gros Colmar are plentiful, and a good demand exists for them. Doyenne du Comice Pears are practically over for the season. Oranges are scarce, owing to delays in arrival caused by the bad weather. Pineapples are seen in large quantities, and are realising good prices; it is computed that considerably over 20,000 will be sold during Christmas week. Canadian Apples are considerably cheaper. Crystallized fruit is plentiful and fairly cheap. Nuts are also abundant, although Almonds are a little dearer than usual. Trade generally is scarcely as brisk as usually obtains at this season of the year. *E. H. R., Covent Garden, Wednesday, December 19, 1906.*

POTATOS.

Bedfords, 65s. to 70s.; Blacklands, 60s. to 70s.; Kents, 65s. to 80s.; Lincolns, 70s. to 90s.; Dunbars, 80s. to 95s. The trade for best samples has improved, but it is less good than it should be at this season. *W. J. C. & S., Covent Garden, December 19.*

COVENT GARDEN FLOWER MARKET.

Trade has been fairly busy during the present week, and many plants have been despatched for country orders. There is an abundance of all material. Rather advanced prices are asked for Chrysanthemums, of which some very good plants are seen. Ericas are also a little dearer. Azalea indica in various colours is plentiful. Callas in pots sell readily. Marguerites are still plentiful. Best Cyclamen sell well, but second quality plants have no demand. Large quantities of Begonia Gloire de Lorraine were seen this morning, but their sale was slow. Among forced plants are Spiræa astilboides floribunda, Lily

of the Valley in pots, Roman Hyacinths in pots and in boxes, and a few Dutch Hyacinths. Supplies of Lilums are very uncertain, and, in general with all flowering plants, it is difficult to say what variations there may be in supplies and prices during the next few days. Solanums continue abundant and command a better trade at slightly advanced prices. Araucaria excelsa, of which I noticed some good plants, always finds purchasers at Christmastide. The Fern stands have been cleared better this week, and Palms also sold more readily. Codiæums (Crotons) are plentiful. Dracæna Veitchii, with many of the terminal leaves quite white, are appreciated for decorative purposes, but they are of no value for stock purposes. They look well mingled with scarlet Poinsettias, which are very numerous.

CUT FLOWERS.

It was disappointing to see large quantities of good flowers unsold at closing time this morning. Chrysanthemum growers are experiencing a bad time, which may have the effect of preventing them growing such excessive quantities another season. It would pay them better to grow smaller quantities of only the best varieties, and to finish the blooms as well as possible; such high-quality blooms as were exhibited at the recent market show do not remain long on the stands. English Roses are scarce, but owing to arrivals from France, the prices for these flowers are not as high as they were this time last year. Carnations are dearer. Calls vary; high prices were asked for them this morning. One commission agent showed me a number of boxes in which almost every bloom had been damaged in transit. Lilium longiflorum sold well this morning, and it may be difficult to procure them during the next few days, except at very high prices. L. auratum are rather small. Lily of the Valley is over plentiful. Tulips and Daffodils (Narcissus obvallaris) are now abundant. Shorter supplies of Violets are seen, but the imported ones keep prices low. Eucharis may advance in price considerably. Very large consignments of Christmas Trees, Holly, Mistletoe, &c., are arriving, and the trade in evergreens is brisk. *A. H., Covent Garden Market, December 19, 1906.*

DEBATING SOCIETIES.

BOURNEMOUTH & DISTRICT GARDENERS'.—A meeting of this association took place on Tuesday, December 4, at the Avenue Restaurant, Mr. F. W. George was voted to the chair. Mr. Nippard read a paper on "The Cultivation of Winter-flowering Begonias." Mr. C. Nippard exhibited a collection of these Begonias, including such varieties as Agatha, Agatha compacta, Success, Mrs. Heal, Winter Cheer, Gloire de Lorraine, Turnford Hall, &c.

GUILDFORD AND DISTRICT GARDENERS'.—A meeting of this association was held on December 11 at the Workman's Hall, Guildford. Mr. W. Hogsden, a well-known bee expert, delivered an instructive lecture on "Bees and Beekeeping," illustrating his remarks by the aid of a large quantity of bee-keeping appliances. At the conclusion of the paper many questions on the subject were answered by Mr. Hogsden. The third annual general meeting has been fixed for January 8, 1907. *G. E. Bullen, Hon. Sec.*

HEADLEY AND DISTRICT GARDENERS'.—At the meeting of this society held on Wednesday, December 12, at the Institute, Mr. Phillips, of Craigendowie Gardens, Reigate, gave a lecture on "The Melon House from January to December." The lecturer dealt fully with the culture of the Melon. He stated that a Melon house could be used for two successional crops of Melons, and for the remainder of the season it could be planted with Beans on the one side and Asparagus on the other. *Thos. Beeson.*

BECKENHAM HORTICULTURAL.—At the meeting held on Friday the 14th inst., Mr. W. Jones, of Sutton, Surrey, gave a lecture on "The Culture of Mushrooms." There was a good attendance of the members. The culture of these popular esculents out-of-doors, indoors, and in portable boxes, &c., was fully dealt with. A good discussion ensued after the reading of the paper. *T. C.*

CARDIFF GARDENERS'.—The usual fortnightly meeting of this society was held on Tuesday, December 11, at the Philharmonic Restaurant, when an interesting address was given by Mr. James J. Graham, entitled "A Gardener on Holiday." The lecture was both interesting and amusing. Mr. Graham, when on his holiday in September last, visited among other places such celebrated gardens as those at Longford Castle, Wilton House, Drayton Park and Bromham, and he gave a brief description of these places.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending December 15, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The *weather* was generally cold and unsettled, but although the amount of precipitation was rather large, there were many fine, bright intervals in almost all parts of the kingdom. A large part of the precipitation consisted of hail, sleet, or snow. On the coasts of Norfolk and Suffolk the snow was very heavy and accompanied by thunder and lightning at the commencement of the period, the yield at Yarmouth and Lowestoft being more than 1 inch in the gauge. A thunderstorm occurred at Arlington on Tuesday, and thunder and lightning were rather general over England and Wales on Wednesday.

The *temperature* was below the average, the deficit ranging from between 4° and 5° in the most northern and north-eastern districts, to between 1° and 2° over Ireland and the south-west of England, and to only 0·4° in the English Channel. The highest of the maxima were recorded either on the 11th or 12th in many places, but on the 15th in the W. They varied from 54° in Ireland S. to 44° in Scotland E. The absolute minima which were mostly registered about the middle of the week were rather low over the United kingdom generally. In Scotland N. and E. the thermometer fell to 16° or 17°, and in Scotland W. and England N.W. to 20°. In many other districts the minima were below 25°, but in the English Channel the lowest reading was 34°.

The *rainfall* exceeded the average in all districts except Scotland N. and England S., but the excess was not large except in Ireland and the north-west of Great Britain.

The *bright sunshine* was above the average except in the English Channel and England S.W. The percentage of the possible duration ranged from 38 in England S., and 34 in the Midland Counties to 18 in England S.W., and to 12 in Scotland N.

THE WEATHER IN WEST HERTS.

Week ending December 19.

The first fall of snow.—After 10 days of low temperatures the weather has since the 16th become much warmer. The cold during the 10 days in question was persistent, but at no time severe—the greatest cold indicated by the exposed thermometer being only 14° of frost. On one day the thermometer at 1 foot deep in the ground fell to within 4° of the freezing point, but at the present time stands at 42°. At 2 feet deep the temperature is now about seasonable, but at 1 foot deep 2° warmer than the average for the time of year. During the past fortnight rain has fallen on all but five days, and to the total depth of nearly 1¼ inches. Rain began falling at midnight on the 15th, and continued without intermission until 8 p.m. on the 16th, or for 20 hours, but to the aggregate depth of less than three quarters of an inch. The first fall of snow of the present winter occurred on the night of the 13th, and on the following morning the ground was covered to the average depth of half an inch. The sun shone on an average during the week for 50 minutes a day, which is 23 minutes a day short of the September average. On four consecutive days no sunshine at all was recorded. The winds were high at the beginning of the week, but the last four days have been very calm. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by six per cent. *E. M., Berkhamsted, December 19, 1906.*

Obituary.

GEORGE ELLWANGER.—We condense from the *Florists' Exchange* the following particulars relating to the career of one who had earned the respect of all who knew him on this side of the Atlantic. George Ellwanger, of the firm of Ellwanger & Barry, Rochester, N.Y., died at his home on Monday, November 26, at the advanced age of 90 years.

Mr. Ellwanger was born on December 2, 1816, at Gross-Heppach, Wurtemberg, Germany, the son of a Grape grower. He came to America in 1835. In partnership with Patrick Barry he established the Mount Hope Nursery Company in 1839. Mr. Barry died on June 23, 1890.

Messrs. Ellwanger & Barry set out together to create and supply a demand for fruit. They selected their stock in Europe by personal visits to France and Germany, shipping the stock to America in sailing vessels. The nursery comprised seven acres at first and was on the site of the present extensive establishment.

After producing a brisk trade in fruit trees the firm created a demand for ornamental stock which increased rapidly. From the pioneer days to the present time it has kept pace with the wonderful progress in fruit and ornamental tree culture, much of which has been the direct result of the firm's efforts. The Mount Hope Nurseries now comprise over 500 acres.

One son, the late H. B. Ellwanger, was author of *The Rose*, and another, George H., who died April 23 of this year, was the author of several books on outdoor and other subjects. Two sons survive, Wm. D. being an active member of the nursery firm.

As a citizen Mr. Ellwanger exerted a beneficial influence upon the growth and material prosperity of the community, and was always prominently identified with every public enterprise of a helpful nature. A man of strong force of character, determined purpose and sound judgment, he possessed not only the ability to plan, but was able to execute large business interests, and through all the long years of a successful career he maintained an enviable reputation for honesty and square dealing. Beginning at the very bottom of the ladder, Mr. Ellwanger advanced steadily step by step until he occupied a position of prominence and trust reached but by few men, and throughout his long business career he was upheld as a model of honour and integrity, never making an engagement he did not fulfil. He stood as an example of what determination and force, combined with the highest degree of business integrity, can accomplish for a man of natural ability and strength of character.

In 1900 Mr. Ellwanger gave eight acres of land, including a large building, on South Avenue, which is now used as a Home for Aged Germans, and to his firm the city is indebted for its gift of beautiful Highland Park. He was a lover of paintings and statuary, and in his home are many rare works of the sculptor's and painter's art. Two years ago a birthday celebration was given as a tribute to his character by many prominent citizens.

ENQUIRIES AND REPLIES.

COCKROACHES.—If *D. W. H.* will send to Mr. Ramsden, Wilmot Street, Derby, and get a tin of his Ramsden Beetle Paste, he will never be troubled further with beetles or crickets. It is without doubt the finest remedy. *H. Webb, Moorfield Gardens, Swinton, Lancashire.*

——Let *D. W. H.* (p. 416) obtain a small tin of Steiner's Vermin Paste, and place bits about the size of a nut on pieces of paper, laying them before dark in the places frequented by the cockroaches and beetles, removing in the morning what remains of the paste, and renew with a fresh dose at night again until the house is cleared of these very objectionable creatures. Riddance will be effected within a week or ten days if the baiting is carried out as indicated. This phosphorous paste, if spread thinly on pieces of bread, and placed in or near the holes of rats or mice before night, a clearance will also be made of these undesirable pests. The paste, if mixed with barley-meal or middlings, and put on pieces of glass, wood, or tin, and then placed in the haunts of woodlice, will exterminate them within one week or ten days, providing that the right article of recent make is obtained; and which, I believe, is supplied by most chemists. *H. W. W.*

BUD-GRAFTING ROSES.—In the note on p. 367 it was said that a little wood should be inserted with the bud adhering to it. I am not acquainted with budding in the stock, but a gentleman over 80 years of age, who is still a Rose-enthusiast, says that budding in the stock was the only method formerly practised. I should be pleased to know which month is the best for "stock" budding, and if an incision should be made, or a cross cut? *Henry Davis, Haslington, near Crewe.*

——The operation should be carried out in July and August when buds on Roses are fully developed, and the sap is still in motion, therefore at the same season as ordinary budding is practised. It often occurs that the rind of the stock will not "run" and budding is not possible, but that is no hindrance to bud grafting. A bud is removed from the shoot of a Rose, quite thinly so as not to take much wood, and a similar slice is taken from the stock on one or opposite sides, the upper half of the leaf is removed and the bud affixed (German, angeplatted) to the stock with worsted, soft bast, &c., the ligature being passed round the stem, or branch, of the stock above and below the bud, and the short and loose ends knotted in the usual manner in budding. The chief point to be observed by the operator is to make the conjunction perfect between the two rinds, for when that is done the union of the sapwood just in bud and stock is assured. If two buds are laid on at the same height up the stem of a Rose stock, one ligature can be made to serve for fastening on both. In fitting a bud on to the main stem or strong branch of the same, a slight oblique incision should be made before the slice of wood and bark is removed and the bud-shield similarly shaped to fit closely, as is done when a T cut is made in ordinary "budding." Rosewood readily unites during growth, whether naturally or artificially produced.

WORKS ON CACTI.—Can any reader inform *G. W. F.* if there are any recent books on Cacti (or on succulent plants, including Cacti) published in the English language other than *Cactus Culture for Amateurs* (W. Watson)?

ANSWERS TO CORRESPONDENTS.

AMERICAN APPLE DISCOLORED: *W. P.* From the small portion sent it is impossible to ascertain the nature of the injury. The defect certainly appears as if caused by frost, but this we cannot say with certainty. To accurately determine the cause you must send us a whole fruit.

APPLE FOR NAMING: *A. P.* You will find the name given in our last issue, p. 416. We do not undertake to furnish names of plants and fruits by post.

BICOLOR CHRYSANTHEMUM: *A. J. C.* The flower-head you send is half yellow, half white. We do not know the pedigree of "Waban," but suppose the occurrence of the two colours may be due to a partial reversion to an ancestral form. Similar instances have been figured in our columns in previous years. (See fig. 163, p. 436.

CARNATION DISEASED: *Beaulieu.* The spots on the leaves are caused by a fungus, Helminthosporium echinulatum. The best plan is to pick off and burn all the diseased leaves, sponging the plants occasionally with a weak solution of Gishurst Compound has been known to effect much good.

HOT WATER WASTING THROUGH EXPANSION PIPE: *Boiler.* There is evidently something radically wrong, either in the manner in which the boiler has been set, or in the way in which the hot-water pipes have been attached to it, or the fixing of both may be faulty as shown by the fact that 100 gallons or so of water are wasted through the expansion pipe as soon as the water reaches the boiling point. You express the opinion that this waste through the expansion pipe is not caused through bad circulation in the heating system, and you admit that you have experienced similar trouble hitherto with four boilers of the same pattern. Then, if the trouble does not arise through faulty circulation, we may assume that it is caused through your boiler being too powerful for heating the quantity of 4-inch piping attached thereto, and being overheated the hot water escapes through the expansion pipe. As no allowance for this difference in the total length of piping which the said boiler is capable of heating is made in stoking, the overheated water and steam naturally escape through the expansion pipe safety valve, thereby emphasising the fact that too much fuel has been put in the furnace to heat the quantity of piping attached to it. If your supply cistern is fixed pretty close to the heating apparatus we should advise you to have it shifted to the end of the house occupying the highest level, heated by the same boiler, fixing the supply pipe in the side of return pipe to the heating apparatus, and in addition to this to put an extra 6-foot length of gas tubing on the top of the expansion pipe, but not to put a cap on it as you have suggested. We have known cases in which boilers of the same make as yours have been cured of the evil complained of by the carrying out of the alterations indicated. We have also known cases in which the same make of boiler as yours behaved in the manner described above, but the cause was faulty circulation, the result of the boiler, a 9 foot 6-inch one, not having been allowed sufficient rise from front casting to the back (third) one when being placed in position, a rise of at least 3½ inches (5 inches would not be too much) should be allowed in setting a boiler of this size and 2 inches for a 6 foot 6 inch apparatus. Thus set, a free circulation of hot water is assured in the boiler and pipes connected therewith providing there are no dips in the flows. Another cause of trouble arising in this type of boiler into which the water is conveyed through the middle casting (as in the case of the "Mammoth") instead of through the usual front casting, is brought about by not letting the said middle casting 1 inch deeper in the brickwork than the front one when setting the heating apparatus in position, so as to cause the water on entering the boiler through the casting to rush up the bottom, side, and top tubes of the boiler and thence through the main and branch flow pipes, thereby ensuring perfect circulation in duly fixed pipes, pipes in which a rise of about half inch in every 9-foot length has been allowed from the boiler onward. But should the middle casting of this boiler be fixed on the same level or a shade higher than the front casting on the brickwork, air will probably accumulate at the point where the water enters the middle casting and a sluggish circulation and waste of water through the expansion pipe follow, in addition to a series of rifle-like reports being heard coming from the front part of boiler as soon as the water gets on the boil, especially when clinkering and stoking the fire. In addition to the middle casting of the boiler described being set 1 inch lower than the front one, the same rise as recommended above from front to back casting should be allowed in placing the apparatus in position. Fortunately horizontal tubular boilers are now invariably constructed so that the water shall enter through the front casting. We have known cases in which the water in the flow-pipe ceased to become heated at a point some distance from the boiler, with the result that the hot water kept shooting up the expansion pipe when the fire was being pushed for the purpose of forcing the hot water through the compressed air in pipe. The stoker did not succeed in this object until a small hole was punched in the flow-pipe, a length beyond the point where the water ceases to become heated, and where there was a slight dip, thereby releasing the pent-up air, and then immediately stopping the hole by driving into it a peg made of a hard wood (only the work of a minute), and within a short space of time the said pipe became as hot as possible throughout the entire length. Bad circulation in main pipes caused through dips, or because insufficient rise was allowed in fixing, may be easily remedied by inserting therein a stem pipe 6 or 9 inches long with a cock on the top to let off accumulated air. We assume that all the air taps at the end of the flow-pipes are clear and in good working order. We have gone into the subject matter of your inquiry at some length because the information may be helpful, not only to you but to other readers who may be experiencing trouble in the working of their heating apparatuses.

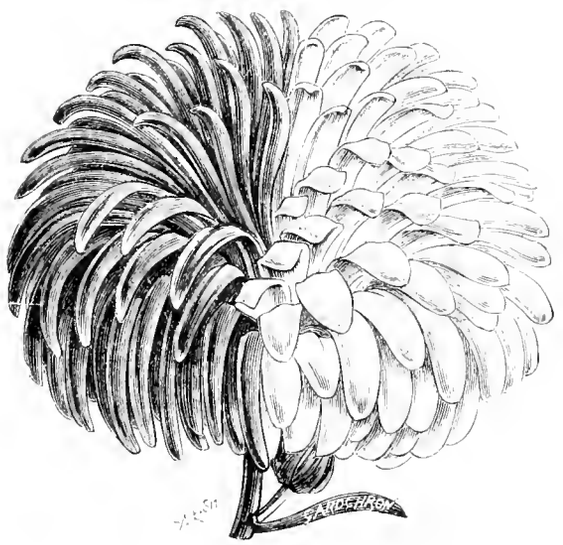


FIG. 103.—A PARTI-COLOURED CHRYSANTHEMUM.

MUSHROOM SPAWN: *M. J. W.* As far as choice of seasons go, you might send the spawn to South Africa now. We cannot recommend particular makers or dealers, but there are several who advertise in these columns, either of whom, we should think, will take particular care to select good and fresh spawn when they know it is to be used for such a purpose.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in this issue are requested to be so good as to consult the following numbers.* *A Reader.* 1, Tower of Glamis; 2, Dumelow's Seedling (Wellington); 3, Chaumontel; 4, Leon Leclerc de Laval.—*H. T. C., Durham.* Franklin Golden Pippin.—*O. B.* 1, Allriston; 2, Cockle Pippin; 3, not recognised.—*Pomona.* 1, Waltham Abbey Seedling; 2, Scarlet Golden Pippin; 3, Brabant Bellefleur; 4, We cannot detect any difference between this and our own specimens of King of the Pippins.—*Zoe.* 1, Poa trivialis, 2, Bromus asper; 3, Arrhenatherum avenaceum; 4, Agrostis vulgaris; 5, Aira cæspitosa; 6, Agrostis alba.—*Beaulieu.* A variegated form of Cupressus Lawsoniana.—*W. C Cleeve.* Cymbidium Tracyanum.—*F. A.* 1, Lycaste Deppei; 2 Maxillaria variabilis. 2 Polystachya luteola; 4, Catasetum Garnettianum.—*A. D.* 1, Cypripedium Madiotianum (Chamberlainianum × Boxallii); 2, Cypripedium insigne; 3, Cypripedium Calypso (Spicerianum × Boxallii); 4, Cypripedium Actæus (C. insigne Sanderæ × Leeanum). The Seedling is Cypripedium nitens superbum.—*W. R. P.* 3, Acalyphas next week; 4, Cotyledon Umbilicus.—*J. W. B.* 1, Odontoglossum Harryanum, bad variety; 2, Dendrobium Phalænopsis, 3, Saintpaulia ionantha; 4, Nepeta Glechoma, variegated form.—*J. S.*; 1, Thuya phcata, Lobbi of gardeners; 2, Cupressus Lawsoniana, 3, Sequoia gigantea (Wellingtonia), 4, Abies nobilis; 5, Cupressus sempervirens; 6, Juniperus Virginiana var. Schottii. It is very difficult to name such scraps.—*F. W.* 1 and 3, both forms of Taxus baccata; 4, we cannot name the grass from such a wretched specimen; 2, not found.

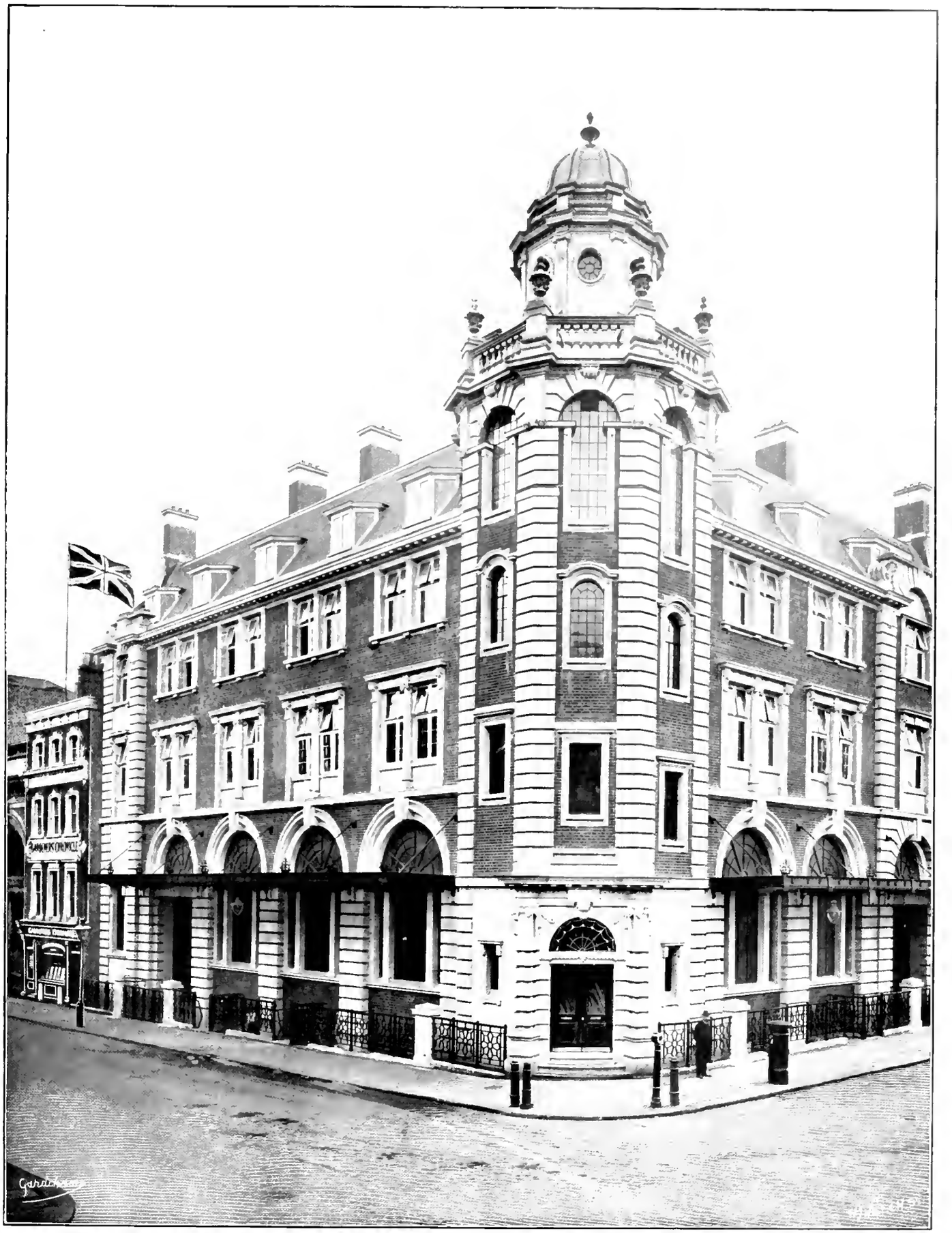
NATIONAL ROSE SOCIETY: *E. R.* Apply to Mr. Edward Mawley, Rosebank, Berkhamsted, who is honorary secretary to the society.

PRIMULA POISONING: *E. Knights.* The irritant effects would generally soon pass off after the cause was removed. If you are still suffering it must be from some other malady which may have been set up as an indirect result of the Primula poison. You cannot do better than consult your doctor. We are unable to give you further advice.

SEEDS OF CLERODENDRON FALLAX: *Plentiful.* We do not know of anyone who would purchase them. You should advertise.

TESTIMONIALS AND CREDENTIALS: *Constant Reader* and *W. R.* Our publisher advises his clients, week after week, not to part with the original documents, but to send copies when necessary. We advert to the subject, because this week two cases have been brought under our notice, where men in quest of a situation through the advertising columns, have sent their testimonials and not received them back even after repeated application. Supposing these statements to be accurate, the refusal to return the documents is most inconsiderate, and might lead to unpleasant legal proceedings. The British Gardeners' Association might fitly enquire into the matter.

COMMUNICATIONS RECEIVED.—M. Hayata, Tokio—M. Alwin Berger, La Mortola—E. J. H.—F. M.—A. Adams (you should send us your address when contributing such a note. It is not necessary for publication, but as a guarantee of good faith—W. P.—A. C. B. (with thanks)—H. S.—D. P. D.—A. C.—W. C.—F. G. S.—C. H.—H. J. J.—C. H. (Plymouth)—R. A. R.—E. J. H.—Eucharis—H. O.—British Gardeners' Association. We receive so many letters relating to this society that we can only publish a small fraction of them. This shows the necessity for such an association conducted on proper lines—H. Morgan V.—G. W. F. You might write to the United States Department of Agriculture. We have inserted an enquiry. Thanks for 2s. 6d., which has been placed in the Orphan Fund Collecting Box—J. G. W. (photograph received)—W. R.—G. H.—F. O.—E. S. S.—M. Buyssman, Middelburg—S. R., Nice—H. H.—F. M. W.—N. E. B.—W. E. L.—A. W. S.—B. L.—I. A. J.—B. D. J.—E. M.—H. O.—W. S.—C. H.—H. J. E.—A. C. B., with thanks—J. L.—A. C.—W. P.—W. C.—Negretti & Zambra—*Kelso Mail*—J. L. & Son—F. M. W.—C. D. S., Michigan—T. B.—E. B.—I. D.—J. A. T.—A. W. S.—J. B.—M. D.—J. McD.—J. F.—E. B.—K. J. Y.—W. P.—G. G.—E. B.—S. G. R.—J. D. G.—L. B. S.—C. P.—G. W.—C. I.—S. C.—A. A.—H. S. K.—H. McO., Tasmania—J. B. D.—O. T.—J. D. & Co.—Justus Corderoy—H. L. B.—Horticultural Society of Styria—J. Mayne—I. C.—J. A.—J. T.



COVENT-GARDEN MARKET, THE LATEST ADDITION.

Temple Press Ltd., Printers, 7-15, Rosebery Avenue, London, E.C.

THE

Gardeners' Chronicle

No. 1,044.—SATURDAY, December 29, 1906.

CONTENTS.

ILLUSTRATIONS.

JOHN ABERCROMBIE.

A HUNDRED years ago John Abercrombie died. His career as a writer on gardening is the most remarkable on record. Abercrombie is said to have been born in the "guid toon" of Edinburgh, in 1726. It is, at least, certain that he lived as a youth in Prestonpans, his father occupying, as tenant, the market-garden which is intersected by the East Coast railway, and on part of which the North British Station of Prestonpans now stands. Details of his life vary, one account having it that he migrated to the neighbourhood of London previous to his eighteenth birthday. The fact, which is still traditionally related in the district, that he was a witness of the Battle of Prestonpans, which was fought in 1745 in the vicinity of his father's grounds, one of the walls of which, it is believed, Sir John Cope utilised as a shelter to his troops, would indicate that he was nearer 20 years of age when he took this important step. John got on very well as a gardener, forcing (according to his own account) having been his strong point, and he used to chuckle in his later years over the surprise created by his feats in producing vegetables, &c., out of season. Part of his novitiate was passed in the Royal Gardens, Kew, and in due time he became a head gardener and married, his wife, so far as one may assume, being a woman of some ambition, and it was, perhaps, due to her initiative that he left the ranks of the private gardener and engaged in commercial horticulture. In 1750, he returned to Scotland, but was back in London within the year. It is difficult to determine when he first engaged as a nurseryman and market gardener. Loudon reports, on evidence which he considered unimpeachable, that Abercrombie was in prison when he wrote his first book, which was published in 1767; and we certainly read of worries that he had in business. Anyhow, it could only have been as a defaulter that he was imprisoned. Previous to this must have occurred his appointment as gardener to the Empress of Russia, which he failed to accept on account of his dread of the sea voyage, he himself having left it on record that he had actually embarked, but left the ship at the last moment for the above reason. The several narratives which I have consulted agree in giving 1770 as the date when he took a small nursery situated north of Mile End, and near Hackney. Not long after that time he engaged as a publican, an employment which he left to take another seed and nursery business at Newington and Tottenham Court. Another account relates that he took a tea garden at Hoxton, in 1774, which he laid out in arbours and other quaint designs, and where he cultivated exotic plants and fruits with great skill. Here and there about the garden he affixed pieces of poetry of his own composition. In 1781, one of his books bears evidence that he was still at Tottenham Court. For the last ten years of his life he resided in Somers Town, the chief employment of his latter days being visiting metropolitan nurseries, varied by more extended excursions to Cambridge on visits to his good friend Donn, Curator of Botany, there. He died, in 1806, from the result of a fall, which fractured his thigh bone, and he was buried at the expense of Donn, who, it is recorded, discharged also the expenses of his illness.

Abercrombie was a singularly healthy man, and the only serious illness he ever had was when he was about 50 years of age. He was abstemious to a degree, but drank enormous quantities of tea, which, with tobacco, which he smoked almost without intermission, he reckoned the chief means of his support. In his private life he was very lovable, and for his amusement played the violin, and liked nothing better than to get a number of young people to dance to his fiddling.

The available data regarding his plunge into authorship are contradictory, and perhaps scarcely to be depended on. In an "Account" prefixed to the *Practical Gardener*, published after his decease, the story is related how Abercrombie was waited on by Davis, the publisher, and Oliver Goldsmith, "about" 1770, with a proposal that he should write a book on gardening; Goldsmith to revise it, and Davis to publish it, and that Goldsmith failed to fulfil his part of the contract "because Abercrombie's style was best suited to the subjects of which it treated." Diffident of its success, the name of Mawe, gardener to the Duke of Leeds, was secured to place on the title page as its reputed author. In this account it is stated that Abercrombie and Mawe did not meet till the success of the book was established, the picture of that gentleman in gold-laced coat and bepowdered wig giving us a faint idea of the splendour of a duke's gardener in those times. Johnson dates the year of its preparation as 1778, and states that Mawe was paid £20 for the use of his name. Loudon relates that Mawe visited Abercrombie on the latter's application, and that he received much information from that person both then and subsequently. The title pages of some of the books on gardening which followed, carrying, as they do, the names of both as joint authors, seem to bear this out.

If it is assumed that this book, like many others at this period, was written for the publishers, who purchased from the person whose name appeared on the title page the right to so use his name, the whole mystery attending its production will be solved. The references to Davis apply no doubt to books which were published by him for Abercrombie at a later date.

It is clear, however, that none of those who wrote of Abercrombie had ever seen the book on which the foundation of his fame rests. Where the title page is transcribed it is never that of the first edition, and notes of the contents of later editions are given which do not appear in the early ones. Mistakes are also made in the year. As a fact the first edition seems to have always been scarce, and at present can hardly be got, which may be attributed to the fact that its purchasers were not of the book-preserving class. Its title page is as follows:—"*Every Man his own Gardener*, Being a New, and much more Complete, Gardener's Kalender than any hitherto published. Containing not only an Account of what Work is necessary to be done in the Hot-house, Green-house, Shrubbery, Kitchen, Flower, and Fruit Gardens, for every Month in the Year, but also ample Directions for performing the said Work, according to the newest and most approved Methods now in practice among the best Gardeners. By Mr. Mawe, Gardener to his Grace the Duke of Leeds, and Other Gardeners. London: Printed for W. Griffin, in Catherine Street in the Strand; W. Chase, at Norwich; T. Toft, at Chelmsford; and E Etherington, at York, 1767. [Price 4s. Bound.]"

The preface seems to be the work of the publisher. There is no table of contents nor index, the headlines and marginal indices obviously being deemed sufficient. It is an 12mo., as all the editions which followed are, and extends to 422 pages. By 1771 a fifth edition had been provided. I think the probable evolution of the book was this. Abercrombie may have written it voluntarily and disposed of it to Griffin, who, having a publication running called *Every Man his own Physician*, gave it a title corresponding to that. Not improbably he got Mr. Mawe's name for a consideration and added "other gardeners." The story of Davis applying to Abercrombie a few years later is no doubt credible, but only if it is conceded that another work on gardening was proposed, for we find Lockyer Davis, in Holborn, as publisher of books written by Abercrombie in immediate succession to the above. Edition followed edition in rapid succession, the sixteenth, and last, previous to the death of the author, appearing in 1800. This and

the first are the two best worth having. It was the practice of Abercrombie to add to each edition both in the text and in the lists of flowers, shrubs, trees, and fruits which became a prominent feature. Accordingly the 1800 print is a bulky volume of 758 pages, with, in addition, an index extending to 92 pages. After his death in 1806 the book continued to sell till 1857, when the 26th edition was published. One of my copies (1839) purports to have as one of the objects of its publication "to accommodate the work to the Scottish as well as the English climate."

The present-day reader may find it difficult to assign a reason why this calendar of gardening operations should have at a bound attained to such popularity and retained it for the long period of 90 years. *Evelyn's Calendar* ran to 10 editions, and covered 42 years; Miller's to 10 editions, and extended over 45 years. For one thing, the title is taking, and the medical treatise preceding it seems to have been popular and would help to make the success of this one by Abercrombie. But it is to the gardening literature of the period one must go to discover the true cause. *Miller's Calendar* was nothing less or more than a superannuated, scarcely modernised copy of Evelyn's, and there were no other cheap books of worth being published. *Hill's Eden* in 1757 was an attempt at something better, but it is involved in its structure and the price was prohibitory, and, like the others, the language was stilted and too scientific for everyday readers. Abercrombie's book consequently arrived at an opportune moment. Its language is so simple that it is plain to the most illiterate. Though somewhat prolix, the directions are sufficiently clear, and the get-up of the book was so inexpensive that it was within the reach of a widened circle of readers. Though admittedly a garden calendar and arranged as such, there is a connected thread running through the several months. Consequently, complete treatises on the culture of the plants of the period are given. Our author did not wait long till he again began to write—unfortunately, sometimes, on subjects he knew next to nothing about, and for a few years he must have written almost without interruption; in 1789 no fewer than five new books were given to the public. Of all his books, the most popular was the *Gardeners' Pocket Journal*, which ran into 35 editions. Fifteen of his books on gardening were published during his lifetime, and he left one in manuscript, which was published in 1816 with the title of the *Practical Gardener*.

There are several portraits of Abercrombie, one as frontispiece to *Propagation, &c., of Plants* (1784); another, a vignette in the 2nd edition of the *Gardeners' Daily Assistant* (1794); and a full-length in the 1800 edition of *Every Man his own Gardener*, at the age of 72. *R. P. Brotherston.*

FIG. 164.—CHRYSANTHEMUM EDITH HARLING; COLOUR YELLOW.

(For text see page 439.)

CHRYSANTHEMUM EDITH HARLING.

IN our issue for December 15 we reproduced drawings by Mr. Worthington Smith of the two excellent single-flowered Chrysanthemums known as Miss Till and Innovation, which were shown at a meeting of the Royal Horticultural Society on November 20 last. At the same meeting the Floral Committee recommended an Award of Merit to the variety Edith Harling, of which an illustration is given at fig. 164. In colour the flowers are canary shade of yellow, and the flowers not only possess good form but they are very freely produced. The plants are said to grow well, and they give good results whether the blooms are thinned out or remain unthinned. Our specimens were exhibited by Messrs. Wells & Co., of Merstham.

ROCK-GARDENS.

(Concluded from page 350.)

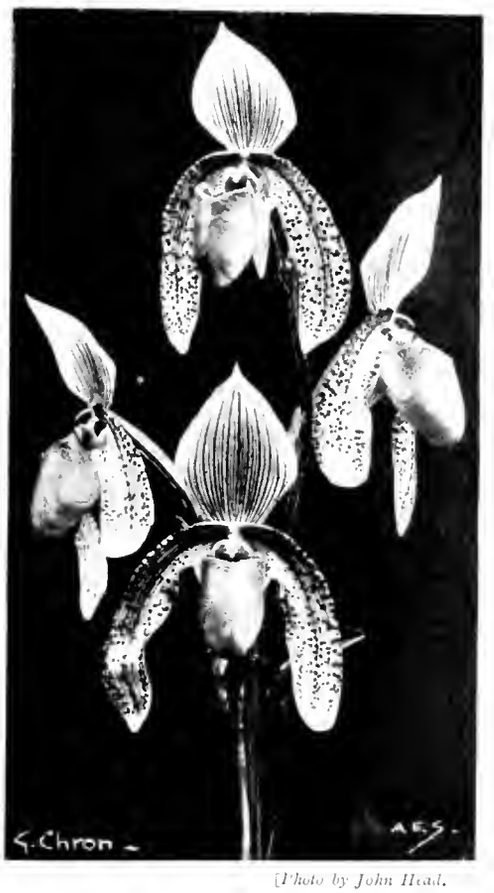
THE ROCKY AMPHITHEATRE.

A TYPE of rock-garden that is possible only on a large estate, and one that proves costly to construct if the ground is not favourable to the work, is the amphitheatre. It is the best type of rock garden for the dell, and it can also be constructed on the higher ground surrounding lakes and ponds or on the sides of any shallow pit or dip in the contour of the ground. It can be made to agree with general garden landscape when seen from without, but it should be self-contained, and once inside the rock-garden, nothing but trees of the garden proper should be discernible in the distance. A vista of equally wild scenery may be made to lead from it in any one direction, but no buildings, formal parterres, pergolas, or straight lines generally should be introduced. The object of the rocky amphitheatre is to produce an effect of grandeur, and its every detail should be of the boldest description proportionate to its size. Plants other than Alpines are admissible, and they may include groups of Conifers, Rhododendrons, Roses, belts of heather, Cortaderias, many kinds of xerophilous plants such as Yuccas, the Brazilian Eryngiums, Dracænas or Cordylines, dwarf Magnolias, and, in fact, all kinds of miniature trees and shrubs that will thrive in such a situation may be used if occasion require and permit. Large areas of water may lie at the foot of such a rock-garden, and any broken ground at its centre or sides may be rock-covered to lend an additional appearance of ruggedness to the scene.

Rock boulders may define the sky-line in places, but on some portions of the summit vegetation should be exhibited higher still. A waterfall can be designed in perfect harmony, or, on smaller structures, a cascade or rill. The sides of such a rockery may be built in a similar fashion to the outcrop rockery, but on a bolder scale. The excessive use of rock or stone is in no wise desirable, and if one covers one-third of its surfaces with these materials, using low-growing tree and shrub for the other two-thirds, a fair proportion of rock scenery and vegetation is maintained. The rocky amphitheatre may be approached through the rocky defile described on p. 349. The rock formations may be laid with the same accuracy as those of the outcrop rockery. Fissure accommodation must be provided for countless Alpines by piecing together smaller stones to form the more prominent bluffs, and the maintenance of moisture limits ensured by placing some stones to form conduits to convey percolating moisture to the plants' roots, and other stones to form drains to carry excess of moisture away. The same ruling in regard to stratification of the bolder groups as in the outcrop rockery must apply also. One may design a vertical or sub-vertical rift in any horizontal formation without offending a geologist—such rifts often occur in natural rock, but the general trend of every seam of any length should be in accordance with the lines of stratification.

TREES AND SHRUBS IN THE ROCK-GARDEN.

Every rock garden I have visited and studied has failed to impress me with any sense of realism in its design. It has either been too hard and repellent in its aspect, due to the use of too much stone, or it has shown the more familiar topsy-turvydom of plant life, in which the highest Alpine finds a place at the very foot of the rock-garden, whilst at the higher elevations are boles of trees, coarse herbs, and other inhabitants of the plains. The cultural disabilities attending such an arrangement I will deal with presently—the arrangement itself now. It has been occasioned mainly by starting badly. The first rock-garden was doubtless a trail of low pockets such as is formed now where a rock-garden proper cannot be built. A desire for a more natural surrounding for Alpines led to the stone-supported bank pocketed for plants; the shallow trench and the winding pathway developed from this in imitation of a rocky defile, with stone banks on either side—garden scenery clashed with the



[Photo by John Head.

FIG. 165. CYPRIPEDIUM YOUNGIANUM VAR. SUPERBUM.

rock scenery; hence it had to be shut out by belts of trees and shrubs, and the result is the familiar incongruity.

The winding trench is a start in one right direction, but it does not go far enough, or, rather, deep enough, and its surfaces are much too flat. A prominent bluff made up of small boulders, and surrounded wholly or partially with bold herbs and shrubs set back in chair-like recesses, does away with the anomaly described. The bluff becomes dominant, its plant denizens are at home culturally and geographically—the shrubby bases are the foils that make them so. Smaller seamed boulder outcrops occurring behind the shrub recesses, virtually place them in natural relations with themselves. Trees in the far background give prominence to every boulder outcropping at the top of the bank, but the same trees, springing directly from the outcrop and towering 40 feet above it, defeat the efforts of the planter in literally overwhelming the whole. The outcrop rockery does not affect to represent anything but an outcrop—but there the relations of shrub, Heather, and alpine plant are in accord, and the boulder masses benefit by a shrubby environment.

The rocky amphitheatre offers the best opportunity for correct arrangement of rock, shrub, and alpine plant. Its spaciousness admits of bold grouping of rock and shrub, and bold grouping means wide separation of rock from rock and shrub from shrub. The latter form the base of the scheme, the rocky outcrops the dominant factor, their fissures, pockets, moraines, and terraces the home of Alpines, for which the rockery exists. Take a vertical section of an average rockery, and note what it teaches, starting from the path upwards: (1) A small boulder, (2) a high level Alpine, (3) a larger boulder, (4) a coarse Alpine, (5) a still larger boulder, (6) a small shrub, (7) an Anchusa or Mullein, (8) a Lilac, (9) a Scots Fir. What an anomaly! And why wonder that such a rock-garden should impress one with its artificiality?

We will now take the cultural disability. It is readily conceded by all who study alpines that the majority root deeply and derive considerable support from percolation moisture. Alpines Nos. 2 and 4 would get what the Scots Fir, the Mullein, the Lilac, and the small shrub had to spare, and as much soil food as it could win from such hungry neighbours. *G. B. Mallett.*

FRUIT REGISTER.

SAM'S CRAB.

A MEDIUM-sized Apple, broadly ovoid-conic, truncate, somewhat five sided, and depressed at the top. Stalk very short, set in a deep basin. Skin smooth, red on the sunny side, yellow elsewhere, with red streaks. Sepals connivent. Flesh white, firm, with a pleasant acidulous flavour. Our specimen came from Herefordshire under the above name. It corresponds nearly, but not quite, with Hogg's description, *Fruit Manual* (1884), fifth edition, p. 205. The same name is applied to another Apple called in Herefordshire Longville's Kernel, p. 134, but our specimen agrees best with the one described by Hogg as above stated.

BRANDY APPLE.

THIS is a small Herefordshire Apple called also Golden Harvey. It is globular in form, obscurely five angled, round, with the deep eye and with deep basin in which the short stalk is set. The skin is smooth, deep crimson; the carpels are acute. Flesh white (yellow in Golden Harvey), crisp; sweet with a marked aromatic flavour. Hogg's *Manual*, fifth edition, p. 88, describes the skin as russety, so that probably our specimen is not correctly named, though in other points it agrees quite well with Hogg's description. It is a good dessert Apple and is stated to be an excellent cider Apple, owing to the strength of its juice.

CYPRIPEDIUM × YOUNGIANUM VAR. SUPERBUM.

CYPRIPEDIUM × Youngianum was first raised by Messrs. F. Sander & Co., St. Albans, and in 1890 an Award of Merit was awarded this hybrid by the Orchid Committee of the Royal Horticultural Society. Even more beautiful than the type is the variety superbum, an inflorescence of which we reproduce at fig. 165. The photograph was kindly forwarded to us by Mr James Renwick, Willow Wood Gardens, Riding, Mill-on-Tyne, who writes: "I am sending you a photograph of a plant of Cypripedium Youngianum superbum flowering in Mr. Drewett's collection. It was raised by Mr. Cookson many years ago, its parent being Cypripedium superbiens × Cypripedium Philippinense, and it is still among the best of its class."

COLONIAL NOTES.

THE GREAT NORTH WEST.

To show the progress made in a territory that was practically a desert in the recollection of many now living, we extract the following notes from the *Florists' Exchange*:—

EDMONTON, ALBERTA.—The long spells of fine, mild, and bright weather broke November 1, and since then there have been three snowstorms with—for this locality—the phenomenal fall of 18 inches. The first real cold for which the northland is celebrated arrived November 15, and for three days the thermometer has registered 25 below with no promise of a moderation in sight. The air is absolutely calm and dry, and not more radiation is required to heat the houses than under much milder conditions with the usual breeze stirring.

The Walter Ramsay establishment was completed in time for a formal opening on the Canadian Thanksgiving Day, October 17. At least 2,500 people took advantage of the invitation, including the Lieutenant-governor of the Province; the Provincial Premier, Mayor May, and the leading society in the city. The establishment, which is without doubt the most northerly greenhouse establishment on the American continent, came in for much commendation.

The Dominion landscape architect, Mr Todd, of Montreal, is in town in connection with the planning of the grounds around the new two million dollar parliament buildings that are just being started. The cities of Edmonton and Strathcona have also secured his services for plans for boulevards and parks on the banks of the Saskatchewan river.

The Week's Work.

THE HARDY FRUIT GARDEN.

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

General work.—If the weather remains mild all kinds of work in the fruit garden can and should be pushed forward, and it must not be forgotten that of late years much bad weather has been experienced during February and March. If the weather proves frosty, the hauling of manure and soil will claim a large share of attention. This is best performed in frosty weather, and should never be done when the soil is thawing and sticky. Soils may be mixed, turned, and otherwise made ready for future use. A proper soil-yard is a valuable adjunct to the hardy fruit garden. Fires can be lighted and rubbish—such as prunings, old roots, &c.—burned. The ashes from wood fires when mixed with soil form a valuable fertiliser, and are excellent for top-dressing, or for mixing with the soil when planting. The pruning and training of all wall trees, except Peaches and Nectarines should be proceeded with. If Figs are to be protected, this should be done without delay: we have recently experienced 14° of frost in these gardens. The protection may consist of branches of evergreens placed over the Fig trees, but a better and more effectual plan is to tie some dry Bracken around the end of the shoots. The Bracken Fern forms a fine protective material against frost.

Store rooms should be thoroughly overhauled at least once a year, and a note made of labels, stakes, netting, &c., in stock, and the whole place put in a tidy condition. Point all stakes, creosote their ends, and tie them in bundles in their respective lengths.

The fruit room.—Pears required for current use should be handled very carefully and should be taken in a covered basket from the fruit room to a position in which they can be kept in a warm atmosphere for 24 hours previous to their being sent to the table. Pears when treated thus are much nicer than when eaten very cold.

PLANTS UNDER GLASS.

By B. CROMWELL, Gardener to T. SUTTON TIMMIS, Esq., Cleveley, Allerton, Liverpool.

Freesias are making satisfactory progress, and having filled their pots with roots, they should be afforded occasional waterings with liquid manure. Do not apply it in too strong a condition or the leaves will quickly assume a sickly appearance. The plants succeed best when they can be accommodated on shelves and kept well up to the light. A few of the more advanced plants of the Cape-grown bulbs may be afforded an atmospheric temperature of 62° to 65°. The flowers, even if few, are always appreciated in the drawing-room, and are attractive by reason of their perfume. Extra care must be exercised in fumigating Freesias, as these plants are most impatient of heavy smokings.

Pilea muscosa (microphylla).—Nothing is cleaner in appearance and more useful as a fringe around the stages of the stove or greenhouse than this Pilea. The unsightliness of the bare pots on the stages is prevented by its use. Cuttings may be inserted in the gravel, and they will grow freely, when they have grown too large they may be pulled out and replanted. If six or eight cuttings are inserted in small 48-size pots, they will soon furnish dwarf bushy plants which may be used in various ways, especially for furnishing greenery for the tops of large pots used in "house decoration." Cuttings may be rooted any time of the year in a warm moist atmosphere.

Roses in pots should be pruned and brought forward in batches according to the demand. If placed in an atmospheric temperature of 45° at night and 50° by day the plants will readily start into growth, but in view of the bad weather continuing it would not be practicable to hasten their growth by any increase of the above-mentioned heat for the present. Spray the plants over on fine mornings, but do not apply much water at the roots until they are in active growth.

Salvias.—As these plants pass out of flower, select a few of the best, shorten the shoots, and syringe the plants with a mixture of soft soap and sulphur to clear them of red spider. Afterwards, place them in a pit having an atmospheric temperature of 50° to 55°, when they will produce clean growths that may be used as "cuttings." This system is much better than propagating from the old growths.

General remarks.—Keep a watchful eye on Codiæums (Crotons) and other stove foliage plants, which are susceptible to red spider. An occasional syringing with a little diluted XL-All insecticide will have a good effect in keeping Codiæums clear of this troublesome pest. Sponging will be necessary in the case of Anthuriums, Alocasias, Marantas, and other similar plants.

FRUITS UNDER GLASS.

By T. W. BIRKINSHAW, Gardener to Lt.-Col. Sir CHAS. HAMILTON, Bart., Hatley Park, Bedfordshire.

Early Figs.—Pot-trees that were "started" as previously advised should be kept steadily growing, without suffering any check, which would probably cause the fruits to drop whilst still young. When the fruit has attained to half its full size, the temperature at night may be safely raised to 60°, and a rise of 5° more allowed during the day. The bottom heat should be kept at about 70°. Ventilation should be given very carefully, as the influx of cold currents of air would be detrimental to the young leaves. Close the house early in the afternoon, and syringe the trees whenever the weather is favourable.

Melons.—The time is now at hand for sowing seeds for the raising of plants to provide ripe fruits in May, but such early sowing can only be recommended to growers who have at their command a light position and a fair amount of artificial heat. Fill 3-inch pots with warm loam and a little wood ashes, and sow two seeds in each pot, in case one fails to germinate. Plunge the pots in a hot bed having a heat of 75° until the seedlings are through the soil; then place them on a shelf near to the glass. A hot bed should be made up of new tree leaves and long litter, thoroughly beating them down as the work proceeds. Some growers prefer fruiting the first Melon plants in pots, but we find the plants in beds most satisfactory. The border should be made of turfy loam, old mortar-rubble and wood ashes, making the bed very firm. When the seedlings have made two or three leaves, they should be planted out into this border. The atmospheric temperature for plants when first put out should not be allowed to fall below 60° to 65° at night, and 5° to 10° higher by day. Some growers prefer to grow their plants on the "cordon" system, and by this method more plants can be accommodated in a house, and larger fruit can be obtained. I have grown them in this way, but I now prefer to stop the plants when they have reached the first wire on the trellis and take up four growths, getting one fruit on each growth.

Young vines in borders.—The pruning and cleaning of these should now be given attention. The cutting back of the canes will require considerable forethought, as it depends in degree entirely on the strength of the rods. If they are thin and weakly, a length of 15 to 18 inches will be ample to leave for one season. Strong, well-ripened canes may be left 3 and 4 feet in length. In cleansing the rods, scraping of the bark should be avoided, at any rate, if mealy bug is not present. Vines which have made two or three seasons' growth may be allowed to carry two or three bunches of fruit next season, but not more. As the roots become more numerous in the border, more space must be given them; additions of 18 inches wide will be sufficient at one time.

Old vines.—Where these have made but weakly growths, and borne only small bunches of fruit, now is the time to overhaul the borders. Take away the old sour soil, and replace it with fresh compost of good turfy loam, wood ashes, and plenty of half-decayed leaf-soil, half-inch bones and some approved vine manure, adding a liberal quantity of old lime scraps. At the same time bring as many of the roots as possible nearer to the surface of the border. Let new rods be subsequently brought up from the bottom to replace the old ones, and much better results will be sure to follow.

THE FLOWER GARDEN.

By H. H. A. PETHERICK, Gardener to the Earl of PLYMOUTH, St. Fagan's Castle, Glamorganshire.

Preparing the ground.—If there are still beds and borders unprepared for the sowing of annuals or for planting with the summer bedding plants, the work should be pushed forward whenever the opportunity permits, not only to allow the ground to be influenced by the ameliorating effects of weather, but also to get it done before the stress of work commences, which the approach of springtime entails. In cases where the beds and borders have been used for many years, it is a wise proceeding to remove a little of the old soil and substitute fresh loam and well-decayed manure to prepare them for summer planting; for though there are some plants like Convolvulus, Tagetes, &c., that bloom more freely in an impoverished piece of ground, the majority of garden plants succeed best in rich soil.

Leaf-mould, and the gathering of leaves.—The value of leaf-mould is so much appreciated now by gardeners, that perhaps it is unnecessary in these notes to emphasize the great importance of anticipating the needs of the future, and of ensuring a plentiful store by artificial preparation. Leaf-mould in many instances is a valuable manure, and contains essential plant foods which cannot be overrated, but perhaps its chief importance in plant cultivation is its property of being able to convert soils particularly heavy soils—into a suitable rooting medium. Leaf-mould is an essential ingredient in the composition of soil especially prepared for the purposes of propagation—whether it be by cuttings or seedlings. In the formation of new flower beds or borders, where the soil happens to be naturally retentive and heavy, the beneficial results from a generous use of leaf-mould would be incalculable, both in aeration and drainage, and also in providing a humus full of plant nourishment. In making new plantations of Azaleas, Rhododendrons, or other Ericaceous plants in a district where lime abounds, leaf-mould could be utilised to a great extent in substitution for peat in fact, as a rooting medium for any plant whatever that abhors lime. As a top-dressing to encourage healthy surface root-action for Rhododendrons, &c., nothing could serve the purpose better than that provided in the form of leaf-mould and cow manure in the proportion of three parts of the former to one of the latter. For the successful culture of Bamboos, leaf-mould is invaluable, and as a top-dressing for perennial borders its value cannot be over estimated. There are places where leaf-mould can be obtained in large quantities naturally, such as in hollows and dells in woods, where the leaves have drifted and accumulated for years, slowly decomposing and forming leaf-mould of the best quality, but, unfortunately, these places are rare, and the majority of gardeners are dependent on their own exertions and foresight for their supply.

Selection of material and site.—The best leaf-mould is that procured from the leaves of Beech and Oak; and in collecting leaves, those from this source should be kept by themselves for the production of a store of extra quality for special requirements, but it by no means follows that leaf-mould made from the leaves of other deciduous trees is much inferior, and, therefore, all should be gathered and stored. In collecting leaves into a heap, care must be exercised to exclude any foreign material that would deteriorate the quality of the mould, such as wood of branches, or pine-needles in any appreciable quantity. The former would create a danger of fungoid disease, while pine-needles would tend to hinder decomposition, and always continue to be a source of detriment to the mould. The selection of the storing ground is a matter that demands careful consideration. In the first place, it should be large enough to contain at least three heaps in their different stages of maturation, for two years at least are requisite for its proper development for use, and each year's heap should not be too high, but should be spread sufficiently to have the advantage of being influenced by the weather and air, and again space should be provided to allow of the material being occasionally turned over. Furthermore, in choosing the position, it must be borne in mind that it should be open to the skies to catch all the rain that falls, but at the same time be so situated as to be sheltered from the drying effects of sun and winds, as well as being screened from observation if in the pleasure grounds. Above all, the "ground for leaves" should be so placed that easy ingress from all parts where the leaves are intended to be collected is ensured, so that they can be conveyed economically and expeditiously by cart, and that it possesses facilities for the removal by cart of the leaf-mould when its manufacture is complete.

THE ORCHID HOUSES.

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

Phalænopsis.—In the warmest house the Phalænopsis, more especially P. amabilis, P. grandiflora, P. Schilleriana and P. Sanderiana, are now developing strong flower spikes, and as the tops of these spikes become too near to the roof glass the plants should be correspondingly lowered, or the ends may decay by reason of the cold air passing between the laps in the glass. In some cases it may be more convenient to tie them down to neat stakes; at Burford we tie a piece of strong raffia about half way along the spikes with a small lump of lead attached to the end, and so weight them over arch-like until they are at least 2 feet from the glass. The plants require to be watered with the greatest care; large supplies are not needed, but it is not safe to let the roots get too dry. An occasional spraying of the surface moss and around the sides of the baskets will be sufficient. Do not allow any water to remain in the centre of the plants and thus cause decay. Phalænopsis will require an atmospheric temperature during the next few months ranging between 65° and 70°, but they dislike a close, stuffy atmosphere. If a "chink" of air can be left on the top ventilators, any over-abundance of moisture will escape, and there will be less likelihood of "spot" making its appearance on the foliage.

Schomburgkia thomsoniana and *S. Kimballiana*, which are also sending up tall flower spikes, should be removed from near the roof to a safer position upon the stage, but they must not be watered too freely or the bloom buds may drop off.

Oncidiums.—The same remarks apply also to such species as O. bicallosum and O. Cavendishianum, the thick, succulent leaves being extremely liable to decay at their base if much moisture be afforded. Such terete-leaved plants as Vanda teres, V. Hookeriana, V. Agnes Joaquim, and V. Marguerite Maron will have made sufficient growth for the season, and plants which were afforded fresh material for their roots to cling to, as advised in a former Calendar, have now become firmly established. They should now be afforded less water at the roots, but must not be kept so dry as to cause the stems to shrivel. Examine the plants occasionally, and if shrivelling is feared a slight dewing overhead now and then will keep them plump.

Vanda Watsoni grows freely in the Cattleya house, and is now producing flower spikes. Elevate the plant well up to the light, and keep the surface moss moist until the flowers open.

Dendrobium Wardianum.—Reverting to my last Calendar, I may say that it is uncommon to see thoroughly established plants of D. Wardianum of several years' standing which produce such fine sturdy pseudo-bulbs as those on newly imported plants, thus showing that our artificial methods of culture are not quite such as should be. These newly-imported pieces are so cheap the opportunity readily occurs for obtaining specimens to experiment with under various cultural conditions.

THE KITCHEN GARDEN.

By J. GIBSON, Gardener to His Grace the Duke of PORTLAND, Welbeck Abbey, Notts.

The year closes.—The gardener should "take stock" at the close of a year, and compare his present condition in respect to crops with his position at the end of the previous year. The present year has been, on the whole, a very successful one as far as crops have been concerned. Spring was somewhat late, but the winter crops lasted well, owing to the mildness of the autumn. The drought of the summer affected many crops on light soils, and made it difficult for small seeds to germinate, but little loss was suffered where the soil had been deeply worked. This matter of deeply working of the soil is the chief requirement for the successful cropping of the kitchen garden. Late vegetables are abundant, and there should be no lack during the latter part of the winter, unless unusually severe weather is experienced. We have been favoured with such a succession of mild winters, that many of the newer vegetables have not had an opportunity of proving their hardiness, and this applies to some extent to Broccolis. A cold "spell" would be welcomed by some cultivators who try these new varieties, as it would enable them to judge of their qualities for their future guidance. December affords an opportunity for thinking out what shall be done during next season in regard to the arrangement of the crops. The general motto should be "thoroughness," and if the gardener acts up to that motto there is little fear that he will fail. May the season of 1907 be one of success for all!

Digging.—Endeavour to get as much of the ground turned up as it is possible at this season.

Winter Vegetables.—From time to time clear all decaying leafage amongst Kales, Brussels-sprouts, &c., so that as little damage as possible is done to the edible portions. Seakale or Chicory roots may be all lifted and stored ready for forcing as required. The offsets of Seakale should be made into cuttings in readiness for planting in spring. Select a few of the best crowns for planting in a cool place to prolong the season as late as possible. Produce may thus be had until the end of May. Those who appreciate Turnip-tops should place a quantity of roots in the Mushroom-house, which is a very suitable place for this early batch. The roots will soon make growths, and if these are damped over daily with lukewarm water the produce will be very tender. A succession can easily be kept up until spring, when there is usually an abundance from the outside.

EDITORIAL NOTICE.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DECEMBER 29—Dutch Gard. Soc. meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick.—36·9°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, December* 26 (6 P.M.): Max. 35°; Min. 25°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, December* 27 (10 A.M.): Bar., 29·2; Temp., 36°. *Weather*—Deep snow.

PROVINCES.—*Wednesday, December* 26 (6 P.M.): Max. 40° Cornwall; Min. 27° Berwick.

SALES FOR THE ENSUING WEEK.

MONDAY & FRIDAY—
Hardy border and other Plants, Roses, Azaleas, Fruit trees, &c., at 67 & 68, Cheapside, E.C, by Protheroe & Morris, at 12.

WEDNESDAY—
Dutch Bulbs, Herbaceous and other Plants, at 12.
Roses at 1.30 & 4 o'clock, Azaleas, Rhododendrons, Fruit trees, &c., at 4, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Consignment of Dendrobium Wardianum giganteum, also Established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Events of the Year.

Horticulturists have of late been so much occupied with social and semi-political matters, such as fertilisers and feeding-stuffs, fixtures, land-tenure, rating, the desirability or the inexpediency of legislation as a measure of protection against the invasion of the American Gooseberry-mildew, the proceedings of the British Gardeners' Association and the provisions of the Prevention of Corruption Act, the full text of which was given at p. 279 of our present volume, that they may be disposed to think that these subjects constitute the most important features of the year 1906 so far as horticulture is concerned. We have no desire to belittle these matters far from it but as regards progressive horticulture there are other matters of at least equal, if not of greater, importance. The first we would allude to is the establishment of a research station at Wisley under the superintendence of a scientific man conversant with the requirements of practical horticulture. It is difficult to over-estimate the value and importance of such an establishment if properly conducted. At present we can only speak of it as one of the most hopeful signs of the times, and we must wait not one, but probably several years before we can expect to reap to the full the advantages of such an institution. In the meantime, as the seed was sown in this present year, we may well allude to it as potentially, at least, one of the most important events of the year.

If we are of necessity obliged to speak of the research station as of something of which we may expect to reap the benefit in the future, we can refer with satisfaction to one thing that has been accomplished during the last summer. We allude to the Hybridisation Conference, which, in spite of its technicalities and occasional abstruseness, was an unqualified success and reflects the greatest credit on the R.H.S., under whose auspices it was carried to so successful an issue. Hybridisation and cross-breeding, which once were mysterious and haphazard procedures, are gradually being reduced to order, and no one will benefit more from this than the practical horticulturist. There is, now, as Mr. Bateson said, less of mystery and more of order, or as one of our Canadian friends picturesquely expressed it, "A clear path has been blazed through the jungle of heredity." There has been no such gathering of foreign horticultural celebrities in this country since the year 1866, and if the number was much smaller than in that memorable year, the aim was more definite and the work more specialised. The proceedings were as fully reported in our columns at the time as the exigencies of time and space permitted. The keynote of the whole was struck in Mr. Bateson's address, which was printed in full at p. 81, and the report to be issued by the society will contain the details of a very memorable gathering.

A change was made in the Directorate of Kew by the resignation of Sir William Thiselton-Dyer, under whose management the condition and utility of the garden were, from a horticultural point of view, much enhanced. His successor, Col. Prain, previously little known in horticultural circles at home, was appointed as Director with the unanimous approbation of those conversant with his work at the Calcutta Botanic Garden, and familiar with his well-earned reputation as a botanist. We notice also the retirement of Dr. Scott, our leading authority on the floras of past ages, as honorary director of the Laboratory at Kew, and trust that this very important post will be filled by some competent man of science in touch with practical horticulture.

Solanum Commersoni and its supposed derivatives have received much attention this year. If the statements made by certain French observers can be substantiated, the matter is one of very great interest scientifically, historically, as well as practically. Those, however, who are conversant with S. Commersoni and its characteristics may well be excused for feeling sceptical as to the "mutations," which are alleged, doubtless in all good faith, to have occurred in this species. At any rate, nothing of the kind was obvious in the carefully-conducted and extensive trials made by Messrs. Sutton, near Reading; trials of a varied character, and which were witnessed by many members of the Scientific Committee during the period of growth, as well as by various bodies of Potato experts at a later period of the year.

The exhibitions of the season call for no special remark, unless it be once more to plead for less monotony and greater practical utility from an educational point of view.

A portrait by Herkomer of the President of the R.H.S., which was exhibited some time since, and which will ultimately be placed in the hall of the society, serves to accentuate the sense which the Fellows at large entertain of the staunchness and loyalty of their president. The complimentary dinner to Mr. William Marshall, on the occasion of his completing the twenty-first year of his chairmanship of the Floral Committee, was a pleasant function, which gave his many friends an opportunity of manifesting their warm appreciation of his services.

Among the host of gardening books of various degrees of merit that have appeared during the year, two in particular stand out prominently, one is the *Hortus Veitchii*, a truly remarkable production, and a very valuable addition to horticultural literature, and the first volume of the *Trees of Great Britain and Ireland*, by Mr. Elwes, in collaboration with Dr. Henry, of which we have spoken quite recently. Both may be consulted in the Lindley Library. The English edition of Prof. De Vries' *Species and Varieties, their Origin by Mutation*, has also been published, and is of great interest to those concerned in the origin of new forms by a process of sporting.

No summary of events would be perfect without an allusion to the weather—a matter of special concern to those who have to do with gardens and fields. Truly, this year has been phenomenal in the matter of climate. The winter was not a very severe one, but the April frosts committed terrible havoc. Apples were greatly diminished, Pears even more so, and Plums were, generally speaking, conspicuous by their absence. Then came a summer hot, dry, and light almost beyond precedent. Indeed, the duration of bright sunlight was, we believe, quite unprecedented, whilst a continuous shade temperature during the day of over 90° at the end of August and beginning of September has hardly ever, if ever before, been recorded. November redressed the balance so far as rain is concerned, and induced premature flowering in Laburnums and other plants which seem quick enough to respond to climatic influences, but are obviously destitute of forethought and discretion.

We know not what the New Year may have in store for us, but it is certain that we have good reason to congratulate ourselves on what has been accomplished in the old one.

A glance over the obituary list is always a melancholy procedure, in some degree compensated for by the assurance that competent successors are coming forward to fill the vacancies left by the demise of their predecessors. Perhaps the greatest loss to horticulture generally is that of the learned, the sympathetic, the indefatigable Comte de Kerchove de Denterghem. C. B. Clarke was not much known in the gardening world, albeit he once held the Directorate of the Calcutta Garden, but as a systematic botanist and a man of singularly varied attainments and agreeable personality he will be much missed. Marshall Ward was one of the new school of botanists, but keenly alive to the requirements of practical cultivators. Glaziou, who died near Bordeaux, in April, rendered untold services to botany and horticulture by his very numerous introductions, both of living and of dried plants from Brazil, and yet no notice of his death appeared in the horticultural or botanical journals. Earlier in the year we lost Harrison Weir, genial, full of quips and cranks, but with ample and varied experience in gardening and natural history generally. In H. E. Milner we lost a representative man a landscape gardener of great repute and a charming personality. Meyer, of Exeter, was another landscape gardener whose loss we

have to lament; and then amongst gardeners we shall so greatly miss Harry Turner that we know not who is to replace him as a florist. Norman, of Hatfield, was a well known figure in horticultural circles, and the numerous tributes to his memory which appeared in our columns are a sufficient testimony of the esteem in which he was held. Andrew Henderson belonged so completely to a past generation that his death in Florida will only recall to those of the present day the memory of a once famous firm. Amongst others we may mention Oliver Hemsley, cut off at the beginning of what seemed a most promising career in India. Mahon succumbed to African fever. Froebel, of Zurich, and Pfitzer, of Heidelberg, are not so well known to British horticulturists, but they have left their mark, the one on scientific, the other on practical horticulture. The Heidelberg professor took part in the Hybridisation Conference before alluded to, when we little thought that we were so soon to lose him. The death of Mr. F. W. Burbidge occurred at the end of the preceding year, but the obituary notice could not be published till the first number of the present year. He did excellent work, and had his life been spared would probably have accomplished even more.

*** **OUR ALMANAC.**—According to our usual practice we shall issue NEXT WEEK a *Gardeners' Chronicle* Almanac for the year 1907. *In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents, will send us* **IMMEDIATE INTIMATION** *of all fixtures for the coming year.*

BLUE HYDRANGEAS.—According to the *Moniteur du Jardinier* the following method is employed in some of the large German horticultural establishments to produce blue Hortensias. The process begins with growing young plants in trenches in the open air in summer, the trenches being filled in with ferruginous loam, to which iron-filings and alum are added. In autumn the plants are potted in a similar compost and kept in a cool house until the time comes for them to be transferred to heated pits, where they are to be forced. They are then watered with a weak solution of alum, which is strengthened as the trusses develop. Treated thus most of the plants are clear and bright in colouring of the flowers.

MELBOURNE ARGUS TIME-TABLES. — *The Melbourne Argus Time-Tables for 1907* mention all the British and foreign mail services between Australia, New Zealand and Great Britain, with rates of passage, postage and cable charges. They include a map and other information, and are of handy size for the pocket-book. To those having commercial dealings with our Southern colonies this book will be very serviceable.

"RATIN."—This is a new preparation for which it is claimed that it is unrivalled for exterminating rats and mice, and harmless to larger creatures. It causes among rats an epidemic of a particularly fatal nature, with a mortality often reaching 100 per cent. In certain isolated cases it has failed, but probably through being improperly used. "Ratin" must be fresh when laid down, must be protected from sun, light and rain, and be plentifully distributed. A stronger preparation named "Ratinin" is available, where the weaker kind proves ineffectual. "Ratin" has been successfully tried by German experimenters and in England, and particulars concerning it can be obtained from the Directors of the Bacteriological Laboratory, 17, Gracechurch Street, E.C.

NURSERY CATALOGUES FOR HAWAII.—The Board of Agriculture and Forestry is anxious to procure a number of seed and nursery catalogues from the leading firms in Great Britain. Many inquiries, we are told, come to the office daily for such information as may be found in these catalogues. The catalogues should be addressed to DAVID HAUGHS, Division of Forestry, Honolulu.

BURBANKIANA.—*Commentator* writes: "Many a great man, as HORACE and GRAY'S elegy remind us, has lived and died unknown for lack of a biographer. Possibly it is a worse fate to be extolled, not wisely but too well, by vociferous panegyrists. We none of us desire to belittle Mr. BURBANK. Reading between the lines of effusive eulogy, we discern a modest worker who has done, and is doing, much that is valuable. But it is his misfortune that no man, however great, can be so great as his portrait by Mr. W. S. HARWOOD. I have been reading this gentlemen's two books, entitled 'The New Earth' (see p. 194) and 'New Creations in Plant Life,' mentioned in your columns, January 20, 1906, of which the one is wholly, and the other mostly, an appreciation of Mr. BURBANK. Mr. W. S. HARWOOD breaks the golden rule that you should never exhaust the whole of your vocabulary in a single publication, not even in a discussion with your cabman. It impoverishes your future utterances. I will quote without comment, fearing to be reckoned by Mr HARWOOD among his hero's 'unjust critics who do not comprehend.' Mr. BURBANK is 'the foremost plant-breeder in the world.' He is 'to pave the way by his own discoveries and creations for others of all lands to follow in his footsteps.' His work resembles 'some strange, vast castle where every apartment is the scene of a miracle.' 'Not all the plant-breeders who have preceded him have ever done so much to ennoble floral life.' 'He has blazed a central way up through the unknown.' 'Over and over again he has disproved the Mendelian laws.' 'LUTHER BURBANK is unique among men in his knowledge of Nature and his manipulation and interpretation of her forces.' 'His name is bruited to-day all over the civilized world.' 'From him dates a new epoch.' 'The reflex of all future achievements will throw back its glory to brighten LUTHER BURBANK'S aureole.' One regrets to come down from these lyric heights. But in a recent horticultural journal, 'A Disappointed Gardener' gives, in dull prose and in detail, the sorry results of his trial of every one of the Burbank creations which he has been able to purchase. The Burbank Lily, the Shasta Daisy, the Fragrant Verbena, the Burbank Dahlia and others have one and all turned out quite mundane and mediocre (see *The Garden*, October 20, 1906). For myself, I can testify that 'Burbank's improved Shirley Poppies' are merely the Shirley strain lapsed and spoiled out of all character and beauty. There remain, it is true, many other creations of which we have not yet been privileged to make experiment. The hybrid between Blackberry and Apple would seem to fill an aching void. Also the Pomato, that 'delicious fruit borne on the top of the Potato haulm.' But it is excusable to judge only by the material which we have been allowed to see. This discrepancy between words and facts is not difficult of explanation. There has been no conscious exaggeration by Mr HARWOOD. What may be called intensive cultivation of plants, that is, the love and care and laborious evolution of each several plant by its own specialist, is a very old story with us. In America it has been unknown till yesterday. Hence the astonishment and the exuberant drum-beating over its beginnings. Youthfulness is good, but has the necessary defects of its qualities. An early horticultural operation of our childhood was the sowing in our own garden of our own Mustard and Cress. In our eyes it was not at all the Mustard and Cress of the old gardener, but a nobler growth of a more vivid green and a surpassing flavour. Also there was a fashion of sowing it to come up in the form of our names. Our transatlantic friends are now sowing their Mustard and Cress, and it spells their own names very large." *Commentator.*

KEW NOTES.

THE GREENHOUSE.

THE value of Buddleia asiatica can scarcely have been fully recognised when first introduced in 1874, or it would not have dropped out of cultivation so soon, as it is a very easy plant to grow. The fragrance of the flowers soon attracts attention. The plants are slender in growth, 2 feet to 4 feet in height. The racemes of white flowers lengthen considerably from the time the lower ones expand, till those at the apex are fully developed. I measured one in this house 20 inches in length. They are terminal and axillary, while in some instances small secondary racemes are developed on these.

Peristrophe speciosa, also known in gardens as Justicia speciosa, is flowering freely. The purple-carmine flowers are particularly interesting botanically, having a twisted corolla. Serviceable plants, 1 foot to 2 feet in height, can be grown annually from cuttings inserted in spring. Should larger plants be desired the growths on the old plants may be shortened, and the plants grown on a second year or longer if necessary.

The bold, handsome foliage of Senecio Petasites and S. grandifolius are an imposing feature in the house even before the plants are in flower. S. grandifolius, with its closely-packed heads of yellow flowers, is already at its best. S. Petasites is rather later, for at present only a few of the flowers on the large terminal panicles show colour.

A group of Plumbago rosea furnishes a bright patch of colour on one of the side stages. It requires stove treatment during the growing season, but may be removed to a warm greenhouse when in flower.

Solanum integrifolium serves to remind us of the festive season, with its red fruits resembling a small corrugated Tomato. The Roman Hyacinths and Paper White Narcissus turn our thoughts to spring. Potted up early in September, for the last month they have been brought on gradually in an intermediate house. A small group of Lycoris aurea, a pretty bulbous plant from China, is a rather distinct-looking subject with golden-yellow flowers. Grown four or five bulbs together in a pot, they thrive under similar treatment to that given to Nerines.

Chrysanthemum ornatum, a pretty Japanese species, has flowers resembling a Daisy; they are about an inch across, the ray florets white, the disc florets yellow. It is figured in the *Gardeners' Chronicle*, 1904, i., p. 51, fig. 22, under the name of C. marginatum.

The old double white Primula forms a pleasing groundwork for several large plants of Begonia Gloire de Sceaux. The coral pink flowers, and rich bronze-coloured foliage stand out prominent. The numerous varieties of Veronica speciosa are deserving of mention. Being almost hardy they furnish useful material for the decoration of greenhouses, where little or no artificial heat is available.

Moschosma riparium is remarkably vigorous in 6-inch pots. The plants are carrying two to four long growths covered with flowers. The plants have only been stopped once.

Other plants in flower at the present time are Eupatorium Purpusi var. monticola, an old friend under another name (the petticoat of gardens, see *Gardeners' Chronicle*, 1906, i., p. 274. Coleus thyrsoideus, Luculia grandiflora, Sparmannia africana, Impatiens Oliveri, Cheiranthus Kewensis, Jacobinia coccinea, Epacrises and Ericas. *W. D.*

THE FERNERY.

(See Supplementary Illustration.)

THE GENUS NEPHROLEPIS.

THIS genus of Ferns, having within the last few years developed a very remarkable capacity for sporting or "mutation" in more than one species, though more especially in N. exaltata, it may not be out of place to review it generally both from the normal and the variational points of view. Smith's "Ferns, British and Exotic," names nine species: N. pectinata, undulata, tuberosa, exaltata, ensifolia, hirsutula, biserrata, davallioides, and falciformis. [About seventeen adopted species are recognised in Christensen's recently published *Index Filicum* —ED.]. Only two of these, however, viz., exaltata and pectinata, figure prominently in our record of sports, while the records of the Royal Horticultural Society's Floral Committee, hereafter cited, chronicle awards to several other species, such as N. rufescens, N. cordata, N. cordifolia, and N. pluma, while others figure under specific names, though merely "sports" and not species proper. As usual, there is a number of synonyms, owing to the close relationship of this genus to the Nephrodium (Lastrea or Aspidium) genus, its fructification consisting of small, round spore-heaps covered by a somewhat kidney-shaped indusium attached to the centre, and very similar to that of our common male Fern. It is noteworthy, in connection with the sportive character of Nephrolepis that the veins are merely furcate, running out from the midrib to the edge of the frond, except where terminated, usually about midway, by a spore heap. It is undoubtedly this free venation which has contributed to the wonderful sub-division which has displayed itself in some of the "sports" alluded to. Taking N. exaltata as a salient example, the normal frond is merely pinnate, or once divided, the frond appearing like a double comb with broadish teeth, these teeth or pinnæ being smooth-edged, bluntly pointed, and slightly expanded at the base next the midrib, to which they are attached by an extremely short stalk. These fronds grow erect, and by continued uncoiling at the tips assume a great length as compared with their width, eventually having the outline of a straight sword blade, ignoring, of course, the divisions. The fronds arise in clumps, and at their bases produce very long stolons covered with whitish scales and carrying with them buds which are capable of producing plants at some distance from the parent. This involves a facility of propagation which has been so largely availed of as probably to account for the lack of variation in this species until recent years, since sports are far more apt to occur through seeds or spores than through buds. Mr. H. B. May (to whom and to Mr. Harry Veitch I am indebted for representative fronds and much information) has, moreover, informed me of the singular fact that when spores of N. exaltata are sown that species has never appeared in its own form in the resulting crop, which invariably consists of a batch of an allied but distinct and softer-fronded type (N. Zollingeriana or rufescens). So persistently indeed has this occurred that sowings of the normal form have been discontinued. As against this, however, we have the fact that the highly decomposite varieties recently obtained are undoubtedly referable to N. exaltata, and have presumably originated from spores of that species.

Unfortunately, however, for the scientist, the members of the trade, with whom these variants largely originate, can tell us little or nothing of their origin. The Ferns are raised by millions from spores, and in immense numbers by other propagative means, such as buds, stoloniferous or other, and every now and again a prize turns up among the resulting plants, probably only developing its character when it has been shifted more than once. Spore-propagation, moreover, is effected in an atmosphere charged with floating spores of all kinds, so that a pure culture is practically impossible. It is, consequently, absolutely impracticable to trace the parentage with any certainty whatever.

We have, therefore, to be content with the possession of the results of such sports, and in N. exaltata the transformation effected is really marvellous. Instead of long, narrow, erect, stiff-looking groups of fronds forming a more or less straggly plant, we have a compact, spreading rosette of wide-based, tapering fronds, divided and redivided into pinnæ, pinnules, and pinnulets developed so abundantly and vigorously, and, withal, arranged so charmingly, that they pile themselves up an inch or more deep, yet leaving deep, symmetrical grooves above the midribs, bordered evenly by the mossy masses arising from the secondary ones. The latest development on these lines has been aptly named N. e. todeaoides, so closely does it resemble Todea superba in its redundant delicacy of growth. The lines followed in this case correspond precisely with those seen in our native Shield Fern (Polystichum angulare) in its extreme plumose forms, all of which are undoubtedly due to a like cause, viz., a further extension of the furcating faculty of the free venation, the results being greater and greater sub-divisions of the fronds on more and more minute lines. Fortunately in these exaltata sports the stoloniferous nature of the Fern is retained, and permits of easy propagation. The spore-production, on the other hand, is likely to dwindle to nil. The thoroughly evergreen nature of N. exaltata adds much to the value of these beautiful variants. It will give some idea of the evolution of the best varieties now extant if we quote the various awards and certificates given to them, as they appeared, by the Royal Horticultural Society, together with their dates.

N. DAVALLIOIDES (?) FURCANS (Veitch, September 17, 1873) is the first on the list. This originated in Australia, being sent over from Sydney, and is a pretty polydactylous variety, an improved form of which N. d. multiceps, appeared 19 years later (H. B. May, August 23, 1892), presumably from a stray spore of furcans. Though certificated as N. davallioides, both these varieties have since been allocated, and properly so, to N. exaltata; N. davallioides being distinguished by very long pinnæ, a character quite absent in the two varieties in question, and in all other respects N. exaltata is obvious. N. davallioides has produced no known sports so far, and acquired its name from the fact that the fertile pinnæ are contracted and deeply crenate, the sori, or spore-heaps, occupying the extreme tips of the projections, so as to present some resemblance to the marginal projecting sori of the Davallia fructification.

N. DUFFII (Veitch, April 4, 1877) also came from the Sydney Botanic Gardens, and was named after Mr. Duff, the curator or foreman of that establishment. It is a curious dwarf, round-pinnaed, ramose form, a sport the species of which it is difficult or impossible to determine.

N. BAUSEII (Veitch, Sept. 9, 1884), a graceful, slender, recurved bipinnate form, with deeply-cut narrow pinnules, originated in a sowing by Mr. Bause of spores of N. pluma (Madagascar), a deciduous species, as is, of course, its offspring.

N. RUFESCENS TRIPINNATIFIDA (Veitch, July 1, 1886), came from Fiji, and is a splendid, bold-growing plumose form, cut precisely on the lines of our Welsh Polypody (P. v. cambricum), the pinnæ being enlarged and deeply cut into pointed pinnatifid segments instead of dividing and redividing on decomposite lines like the N. exaltata varieties referred to.

N. EXALTATA in 1890 produced a crested variety named N. e. plumosa (May, April 22, 1890), a name subsequently changed to N. e. grandiceps, as it does not belong at all to the plumose section. It forms a very compact and globular plant, with fronds divided and subdivided and pinnules multifid and incurved, while the frond tip justifies the amended name by bearing a heavy corymbose crest. In this crested or tasselled direction N. exaltata has yielded a number of other crested forms, culminating so far in N. e superba (May, April 22, 1890), in which the apices of the frond and its sub-divisions are developed into large bunchy tassels, so large indeed that the lateral ones are piled up one upon another so as to form a dense inch-deep fringe, the frond terminating in a large one to match. A curious variant of this type has appeared with each frond twisted spirally with singular effect (N. e. superba spiralis, May). The previously-described forms of N. e. furcans, multiceps and grandiceps are in all probability gradational forms of N. e. superba, although, as before explained, this cannot be established.

N. E. PIERSONII was distributed in the United States in 1903 as a splendid decomposite sport from the so-called Boston Fern (N. exaltata), and evoked great admiration as a decidedly fresh and promising break. N. e. elegantissima followed (May 29, 1906, Godfrey), still more finely cut, and, finally, so far as present records are concerned, Messrs. Rochford (October 9, 1906) capped an apparent climax with the N. e. todeaoides, already described. In this connection it is a curious fact that ten or twelve years ago, long before Piersonii appeared, Mr. Roupell, of Roupell Park, sent the writer a number of bipinnate fronds of N. exaltata, all unfortunately barren, which had appeared on a normal plant in his locality. This plant, however, either reverted or was lost sight of in some way, for, despite our urgent advice to sow and our prediction (since verified) that a capacity thus indicated might be the forerunner of very fine decomposite types, nothing more was heard of the particular plant.

N. PECTINATA, a narrow-fronded species, but otherwise not unlike N. exaltata, has recently yielded a very pretty crested form—N. p. canaliculata (May)—in which the short polydactylous pinnæ are turned upwards and rolled inwards in such a way as to render the frond almost tubular, whence the varietal name.

N. CORDATA VAR. TESSELATA (Prickett, October 23, 1906) has been christened on the *lucus a non lucendo* principle. It is a crested form of moderate merit, but we have quite failed to find any tessellated or mottled character justifying the varietal name.

We now come to one of the most remarkable variants of all in N. cordifolia crispata congesta (May, July 7, 1903), in which every part of the frond is so densely congested and so closely packed on the thickened and shortened stems, that the height is reduced to inches instead of feet, the plant being dwarfed to the utmost. N. Mayii (May, October 13, 1903), presumably the same species, is of similar type, but on bolder lines, forming a very handsome plant, and at the same time a remarkable contrast to the plumose and crested varieties described.

From the above it will be seen that with two or three exceptions, the more marked sports in this genus have appeared within the last four years, and that the finest forms, N. e. superba May and N. e. todeaoides, as representing the present extremes of cresting and plumation, may probably be the outcome of three or four preceding gradations. N. cordifolia congesta cristata, on the other hand, had no gradational forms, and N. pectinata canaliculata may be possibly due to a cross, being so closely allied to N. exaltata with its tasselled variants.

In conclusion, I take the opportunity of deprecating the use of [Latin] specific names for varietal forms. In the list before me there are N. Bauseii, N. Duffii, N. Mayii, and N. Westoni, to which awards have been given under specific names, although in two cases the species proper is known. *Chas. T. Druery, V.M.H., F.L.S.*

HOME CORRESPONDENCE.

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

OMPHALODES LUCILIÆ. The illustration of this plant on p. 53 interested me greatly, and caused me to recall the solitary example of the plant that, some 35 years ago, was growing under my care in the nursery of the late Mr. Robert Parker, at Tooting. My instructions were to watch it so carefully day by day that not a single seed should be lost, for the Tooting plant was one of the very few which then existed in England. During the first season I was successful in harvesting a few dozen seeds, most of which were sown a little later the same season, the remainder being sold. The chief disappointment experienced in the raising of seedlings of the plant is that a large number are quite devoid of the characteristic glaucous leafage of the original plant, although identical in all other respects. At this date it is interesting to note that the plant still produces many green-leaved seedlings, and I have never known a batch to be perfectly free from them. In the month of May, either in 1874 or 1875, I had a plant strong enough from which to risk taking cuttings, and of these I secured 13, each with a "heel" attached. Not more than the eighth part of an inch separated the heart of the cutting from the heel, consequently each piece had to be tied to a little stick or peg to hold it in position. In less than five weeks every one of the cuttings was nicely rooted, and they were therefore potted up singly. Since that time I have rooted many cuttings of the plant, but the satisfaction on my first success was greatest. May and June are the best months for inserting cuttings, and bell-glasses should always be employed, for once they are permitted to droop they rarely, if ever, form roots. The plant will readily submit to division during the above named months, but interference during winter is most harmful, and as fatal in its results as is an application of manure to its roots. In regard to soil the plant is not especially fastidious. My first specimen was planted in a good depth of sandy loam and peat on the level ground, and it was partly protected by a handlight. In the late Mr. Atkins' garden at Pamswich this Omphalodes rambled in wild profusion over a low rocky slope, the roots for the most part being in loam and slate-chippings. In sandy peat it also succeeds well. The finest leaf growth and leaf colouring I have known the plant to develop was when planted in a deep fissure of rock in a mixture of strong loam-peat, Leighton-Buzzard grit with some finely-broken soft brick freely added. The rooting medium should be quite 2 feet in depth, and should be provided with means for perfect drainage. Slugs are very fond of the leaves. The plant succeeds well in the rock gardens if treated as described above, and it is also at home in the rock wall if its roots can penetrate into cool soil. *E. H. Jenkins, Hampton Hill.*

BEGONIA GLOIRE DE LORRAINE FROM SEED.—There are many gardeners who have yet to learn that Begonia Gloire de Lorraine does produce seed. I shall be much surprised if the note by Mr. Cromwell (see p. 406) does not fall as a bombshell on the ears of many professional men. The theory that hybrids are not capable of reproducing themselves by seed is, we know, gradually being broken down; but that B. Gloire de Lorraine is assisting in upsetting this theory is somewhat surprising. The number of articles that have been published during the past 15 years, in reference to the propagation and cultivation of this plant are enormous; but I do not recollect reading of anyone being successful in the saving of seed, at least with one exception. A note appeared in the *Gardeners' Chronicle* about six years ago. It had been inserted by a leading firm of nurserymen, and stated that they had been successful in the raising (not saving) of seed, and that they hoped at a future date to be in a position to exhibit the plants at a meeting of the Royal Horticultural Society. Whether they had the "honour" of doing this I trow not. The bearing of seed by this Begonia is not a matter of fact sort of thing in South Wales, as it appears to be at "Cleveley." A few particulars from Mr Cromwell as to his method of procuring seed otherwise than by self-fertilisation would, I am sure, be of great interest to a large number of the readers of this journal. *H. R., Cardiff.*

——— In the issue of *Gardeners' Chronicle* for December 15, p. 406, there is a note on Begonia Gloire de Lorraine, by Mr. B. Cromwell, and a part of the same is as follows: "The stock was raised by leaf propagation from cuttings, and from seed, the latter germinating on the surface of the pans, which last year were suspended in the corridor, thus showing clearly that B. Gloire de Lorraine will reproduce itself from seed providing the atmospheric surroundings are suitable." I think it would be of great interest to many readers if they could find out what treatment, in the way of "atmospheric surroundings," &c., are essential. *A. J. W.*

THE PLANTS OF THE BIBLE.—In your review of my book with the above title, you note two supposed errors and add one (?). (1) I did not mean the reader to infer that the scarlet cup of the Yew is poisonous, for I have eaten them repeatedly, and was never the worse. My words are: "It is the leaves and little green seed or kernel within the sweet, juicy, scarlet cup that is very poisonous. Children have died from eating the latter (i.e., the seed), and cattle from browsing on the foliage (i.e., the former). (2) The Weeping Willow (*Salix Babylonica*) is not mentioned as indigenous but "cultivated." My words are: "There are eight species of Willow in Palestine, including the cultivated *Salix Babylonica*, or 'Weeping Willow.'" With regard to my philological suggestion that *Almug* or *Algeim* was the Greek *Smilaks* or Yew, you observe "Philological sleight of hand of this description would enable one to prove (?) anything." By no means, for you omit the qualification that the "sleight of hand" must be rigidly conformable to Grimm's Law, viz., the Labials, Dentals and Gutterals are, respectively, interchangeable. A good example is seen in the word *Bodega* over a Spanish wine-shop, for it is identical with the German *Apothek*, though used in a different sense. *George Henslow.*

CHRYSANTHEMUMS AT SHAW'S GARDEN.

FROM an American journal we learn that there has been in St. Louis a rather novel Chrysanthemum show, differing in a number of respects from the usual exhibitions known by this name all over the country.

"Shaw's Garden," or the Missouri Botanical Garden as it is properly called, is very well known as a scientific establishment of international reputation and a place worth seeing by every visitor to St. Louis. It has also won recognition as a place to which florists may turn for information or carry their professional troubles with the certainty of getting willing help. But comparatively few people outside of St. Louis know that for several years past it has vied with the florists' clubs and horticultural societies of other large cities in staging Chrysanthemums on a large scale. In 1904, without impairing its own exhibit, the garden easily won the first prize for Chrysanthemums in number and variety at the national flower show that was held in the horticultural building of the World's Fair, even the Japanese exhibit falling behind it.

These Botanical Garden exhibitions differ from ordinary Chrysanthemum shows in several respects. The plants are all grown by the garden itself; they are not confined to commercially profitable varieties; they are arranged so as to represent the various Chrysanthemum types instructively, and as cut flowers are not used, their arrangement is made highly artistic. Perhaps the greatest difference lies in the fact that they are absolutely free to the public.

This year the Chrysanthemums were displayed in a large circular tent, nearly 100 feet in diameter, covering a large part of the parterre or sunken garden just within the main entrance, and the plants were plunged in the beds that a little later will be planted with Tulips for spring blooming. This arrangement in turf-bordered beds, separated by firm well drained walks, has made seeing them a delight to visitors, who have thronged the tent notwithstanding unprecedentedly inclement weather. For a part of the first week a dense blanket of smoke hung over the city, and offices and even street cars were kept lighted for a good part of the day. To meet this emergency, which reduced all of the flowers to a uniform cherry colour, electric lights were installed, and the directors of the garden took advantage of this circumstance to throw the tent open to the public during the evenings—a concession which has never before been made in the history of the garden, and which enabled a very large number of business men and women to see the flowers when they could not have done so during the daytime.

Everyone who has had to stage Chrysanthemums knows how hopeless the first plant—or the first half dozen plants, even—looks when it is moved into place in a hall. It was the same when the first specimens were set in the big tent, though they were large enough to make it necessary to take off roof sections of the houses they had been grown in, in order to get them out; but for all this, the tent has been full to overflowing with superb, single-head, bush and standard grown specimens, to the number of over 3,000 and representing over 300 varieties, each legibly named and all worked into as great harmony of colour as the entire gamut of Chrysanthemum colour allows. The primitive yellow Chrysanthemum Indicum and the very similar but later blooming "Golden Chain" variety have attracted a good deal of interest in contrast with the mammoth heads of the best trade varieties in all shades of white, yellow and red. As usual, a grafted plant occupied a prominent place, and attracted the attention of curiosity hunters; and in a sense this was justified by the plant itself, for it had been surrounded by potted plants of the 25 varieties to be grafted on it, and these were allowed to grow on their own roots until the inarching was completed, so that their flowers, instead of being starved as grafted flowers often are, were of normal size and perfection.

One good effect of the botanical exhibition is that the florists of the city have begun hustling for a fine flower show next year, and are talking of a $10,000 guarantee fund, to be raised in the course of the winter, so as to ensure an unusually good exhibit next fall.—*Florists' Exchange* (American).

LAW NOTE.

PURCHASE OF ORCHIDS FROM COLOURED PLATES.

WE have already announced the result of the appeal lodged by M. M. Linden et Cie against the decision of the lower courts. The full report of the trial, with the details of the motives upon which the judgment was based, is given in technical fashion in the *Journal des Tribunaux*, of Brussels, for December 9, 1906. This case has lasted some two and a half years, so that the law's delays are not peculiar to this country. We understand that Mr. Leemann has been repaid the money that he expended, with costs.

CHRYSANTHEMUM ROBERT MORGAN.—From the gardens of the Alexandra Palace we lately received a bunch of a single-flowered Chrysanthemum under this name. The flowers were large, clear reddish-brown or maroon colour, with a yellow centre, and showed evidence of good culture.

Obituary.

JOHN BRACK BOYD. The death occurred on the 12th instant of this well-known Scottish amateur gardener, of Cherry Trees, Yetholm, N.B. Mr Boyd was the raiser of some fine Saxifragas, notably the one bearing his name, S. Boydii, the history of which was given by Mr. Boyd's brother, himself a famous horticulturist, in our issue for May 12, 1906, p. 331. Deceased, who was 89 years of age, took a keen interest in gardening to the last.

THE WEATHER.

THE WEATHER IN WEST HERTS

Week ending December 26.

The heaviest fall of snow for nearly seven years. During the past week the temperatures have been all more or less below the average, but at no time was the cold severe, the exposed thermometer on the coldest night indicating only 15° of frost. At 2 feet deep the ground is at the present time 2°, and at 1 foot deep 3°, colder than is seasonable. Rain fell on only one day of the week, but there occurred a heavy fall of snow during the early morning of the 26th, which covered the ground to the average depth of 6 inches, making this the deepest fall of snow experienced here since February 14, 1900, or for nearly seven years. The percolation has been gradually slackening during the week, and has now almost ceased through both gauges. The sun shone on an average for one hour twelve minutes a day, which is about five minutes a day less than is usual at this season. During the seven days ending the 21st, no sunshine at all was recorded. The first five days of the week proved calm, but on the last two days the wind was rather high. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by about four per cent. *F.M., Berkhamsted, December 26, 1906.*

SCOTCH GARDENERS IN AMERICA.

(Concluded from page 424.)

AMONG the prominent seedsmen of America to-day the names of the following Scotsmen are included:—ROBERT JAMES and JOHN K. M. L. FARQUHAR, of Boston, Mass., natives of Fyvie, Aberdeenshire, introducers into commerce here of, among other good things, the Farquhar Rose, the Farquhar Violet, Lilium Philippinense, and Begonia Gloire de Lorraine. John K. M. L. Farquhar is a great traveller, and is in much demand as a lecturer on horticultural topics. ALEXANDER DON, of New York, a Brechin boy, a graduate from Drummond's, Stirling, is an expert on grass and other seeds, and for years was secretary-treasurer of the American Seed Trade Association. ALEXANDER FORBES is general manager of Peter Henderson and Company, New York, a man well posted in all branches of the seed business. Mr. Forbes is the inventor of a revolving showcase for display of seeds in packets. The CURRIE brothers, the largest seedsmen of Milwaukee, Wis., are natives of Ayrshire. ALEX. M. RENNIE, another Scot, is a prominent seedsman of Providence, R.I. ROBERT VEITCH and ARCHIBALD VEITCH, natives of Peebles, became well-known plantsmen and seedsmen in New Haven, Conn. WM. MEGGATT, born near Drumlanrig Castle, came to America in 1859, entering the garden seed business, from which he has retired. He is a replica of Burns's Captain Grose, and has a large and varied collection of antiquities. He was at one time president of the American Seed Trade Association.

As commercial florists, contributing their share toward the advancement of their craft, I would mention JAMES DEAN, a native of Wigtonshire, born in 1845, a noted grower of Easter plants, now retired. Mr. Dean is a veteran of the Civil War, and was president of the Society of American Florists for one term. His hobby is the collecting of antique firearms, of which he has a large and varied assortment. ADAM GRAHAM, Cleveland, O., a native of Fife, born in 1840, a successful florist, and man of affairs. An ex-president of the S.A.F.O.H.

Among modern Rose growers ALEXANDER MONTGOMERY, of the Waban Rose Conservatories, Natick, Mass., is a recognised leader. He was born at Port William in 1848, and apprenticed as gardener on the Earl of Galloway's estate. He came to America in 1882. The Waban, a sport from Catherine Mermet Rose, sometimes called the Red Mermet, originated at this establishment, and in recent years the new Rose Wellesley was obtained. Mr. Montgomery was president of the American Rose Society for two terms. Mr. Montgomery's son, Alex., Jr., is the author of a monograph on *The Grafting of Roses*. GEORGE ANDERSON, Philadelphia, a noted Rose grower, is a native of Jedburgh. One of the most widely known among the living floriculturists in the United States is PETER FISHER, of Ellis, Mass., the originator of some of the best of the present-day American Carnations. He has been engaged in improving that flower since 1892. His productions include the varieties Mrs. Thomas W. Lawson, the famous "$30,000-dollar Carnation," Enchantress, Nelson Fisher, Mrs. M. A. Patten, Beacon, and Evangeline. Mr. Fisher was born near Dunkeld, his father being land steward for the Duke of Athole. He received his training in the gardens of the estate of the Dowager Duchess of Athole. Mr. Fisher served as president of the American Carnation Society the present year. JOHN MURCHIE, Sharon, Pa., from the West of Scotland, is also a noted raiser of seedling Carnations, the variety Fred. Burke being one of his best. JOHN DONALDSON, a native of Banff, a graduate from the Earl of Fife's gardens, now of Elmhurst, N.Y., a Carnation specialist, was for years secretary of the New York Cut Flower Exchange. JOHN BIRNIE, of West Hoboken, N.J., from Aberdeenshire, a noted grower of Geraniums, Verbenas, and Carnations, is one of the leading men in the New York Plant Market. JOHN NICOL, also an Aberdonian, who in his young days was gardener at Viscount Arbuthnott's estate, near Bervie, is an ex-president of the New York Market Florists' Association.

JOHN SCOTT, a native of Newlandrig, near Dalkeith, served under Wm. Priest at New Battle Abbey. He is at present president of the New York Florists' Club. The popular Nephrolepis exaltata var. Scottii, a sport of the type, originated with him. Mr. Scott is one of our progressive young florists, and is building up a large establishment at Flatbush, near New York.

WILLIAM and JAMES T. SCOTT, brothers, natives of Aberdeenshire, possess a facile pen, and contribute numerous articles on gardening subjects to the technical Press. William Scott was for several terms president of the Tarrytown (N.Y.) Horticultural Society, and is a very successful grower and exhibitor of Grapes, Chrysanthemums, and vegetables. These gentlemen have recently entered the ranks of the commercial growers, with greenhouses at Elmsford, N.Y.

WILLIAM SIM, Cliftondale, Mass., a native of Fyvie, apprenticed at Dunnottar House, near Stonehaven, ranks high among our progressive young florists. He is an expert grower of Tomatos under glass, and as a cultivator of the Princess of Wales single Violet has few, if any, equals. It may be safely said of him that he was among the first to grow Sweet Peas under glass to a high state of perfection.

In the retail florist branch of the business, ALEX. MCCONNELL, New York, takes a leading place. He was born in the Isle of Man of Scotch parents, and is in all things truly Scottish. The WEIR brothers, John and Fred., of Brooklyn, N.Y., are prominent retailers in the city of churches. Their father, James Weir, a native of Perth, was a pioneer grower of plants around New York City. SAM. MURRAY, Kansas City, Mo., a native of the West of Scotland, is a leading retailer in his home city, and has few peers as a grower of the Gloire de Lorraine Begonia.

In the list of park superintendents is included the names of JOHN MCLAREN, of the Golden Gate Park, San Francisco's beauty spot, which figured prominently as a camping ground for the recent earthquake-fire sufferers. Mr. McLaren is a Perthshire man, and Golden Gate Park is an enduring monument to his skill. JOHN DUNBAR is assistant park superintendent of Rochester, N.Y., a frequent writer to horticultural journals. JOHN W. DUNCAN, from Aberdeenshire, is assistant superintendent of the park system of Boston, Mass., and a local correspondent of a leading trade journal. RODERICK CAMPBELL is superintendent of the Syracuse (N.Y.) parks.

WILLIAM FALCONER, one of the ablest gardeners in the United States, born in 1850, a native of Inverness-shire, commenced his horticultural career in the establishment of John Grigor and Company, Forres. He graduated from Kew, and joined the staff of the *Garden* in 1872. Two years later he came to America, and has held such important positions as superintendent of the Botanical Garden at Harvard University, gardener for the late Mr. Charles A. Dana, editor of the *New York Sun*, and superintendent of Schenley Park, Pittsburg, Pa., in the development of which he played a prominent part. He is now superintendent of Allegheny Cemetery, Pa. Mr. Falconer was the first editor of *Gardening*, an illustrated horticultural periodical. He is a careful writer and frequent contributor to the technical Press, and is author of *Mushrooms and How to Grow Them*. Among cemetery superintendents may also be mentioned ROBERT CAMPBELL, a native of Ellerslie, Renfrewshire, in charge of Cave Hill Cemetery, Louisville, Ky.; and ALEXANDER REID, superintendent of Oakwood Cemetery, Chicago.

Along the scientific lines the Hon. JAMES WILSON, the present Secretary of Agriculture in President Roosevelt's Cabinet, is a native of Ayrshire. He has drawn to his department many able scientists in special lines of investigation in horticulture, whose work is of the greatest benefit to those commercially or otherwise engaged in the cultivation of fruits, flowers and vegetables in America. GEORGE W. OLIVER, a native of East Lothian, and a graduate from the Edinburgh Botanical Gardens, is an expert in the Bureau of Plant Industry, Department of Agriculture, Washington, D.C. Mr. Oliver has done some excellent work in the improvement of the Easter Lily, in hybridising Water Lilies, Nepenthes, and other plants.

ROBERT CAMERON, a native of Inverness, a former Kewite, is curator of the Harvard Botanical Gardens at Cambridge, Mass., and has collected in the West Indies, South America, and elsewhere many fine specimens for that institution.

JOHN MUIR, of California, ranks as one of our foremost living botanists, and is an author of repute.

PRIVATE GARDENERS.

I now come to private gardeners. Around Newport, R.I., some of the finest residences and private gardens in America are to be found, and in the development of the grounds and in the care of the greenhouses Scotsmen have been, and are, prominent. Among them are WILLIAM FINDLAY, a native of Fife, noted as a grower of fruits under glass; JAMES MCLEISH, a Roseneath boy, a most successful Grape grower, and a past president of the Newport Horticultural Society; ALEXANDER MACLELLAN, a native of Lanarkshire, a good all-round gardener, who has given much attention to the eradication and prevention of insect pests, one of the originators of the Newport Horticultural Society, and its present president. JAMES ROBERTSON, a Forfarshire lad, in addition to his other qualifications as a gardener, is an authority on Dahlias, and has raised several good seedlings. COLIN ROBERTSON, his brother, is an expert grower of Crotons, and is also an enthusiastic cultivator of Dahlias. JAMES BOYD, from Selkirk, is a successful grower of Lilies, Peaches and Nectarines under glass. HUGH WILLIAMSON, from the Burns country, has one of the largest collections of H.P. Roses in the locality, and is a very successful exhibitor.

ANDREW MEIKLE, a native of Lark Hall, Lanarkshire, ranks high as a landscape gardener and maker-up of floral designs. He was at one time financial secretary of the local society. JAMES KYLE hails from Kirkcudbrightshire, and is an expert grower of Adiantum Farleyense. CHARLES D. STARK is an excellent cultivator of ornamental foliage plants. ANDREW POW is a native of Hawick; has raised some very good varieties of Nerines, and is also an expert Chrysanthemum grower. DAVID MCINTOSH served his apprenticeship at Skibo Castle, now the Scottish home of Andrew Carnegie. Mr. McIntosh was one of the originators of the Newport Horticultural Society, and has been its secretary for nearly five years. He is a frequent contributor to the horticultural Press, and is an able plantsman.

At Orange, N.J., PETER DUFF, a graduate from the gardens of St. Martins, Perthshire, now superintendent of Mr. J. Crosby Brown's fine estate, and an expert in Chrysanthemum culture; MALCOLM MACRORIE, a West Highlander, superintendent of the estate of Doctor Mandeville; and GEORGE SMITH, formerly gardener for Colgate, of soap fame, now a commercial florist, all held for a term the office of president of the New Jersey Floricultural Society. WILLIAM REID, another Scotsman, is its treasurer at present.

JOHN F. JOHNSTON, an Edinburgh lad, gardener on the Dana Estate, Glen Cove, is secretary of the Nassau County (N.Y.) Horticultural Society; and his brother-in-law, W. H. WAITE, a graduate of the Edinburgh Botanical Gardens, holds a similar office in connection with the Elberon (N.J.) Horticultural Society. Each of these young men contributes frequently to the gardening Press, both being expert photographers of plants and flowers.

DAVID FRASER, a native of Craigo, Forfarshire, who served his apprenticeship at Usan, near Montrose, is head gardener for Mr. Henry C. Frick, the millionaire ironmaster of Pittsburg, Pa., and the present secretary of the Chrysanthemum Society of America.

JOHN DALLAS, a native of the North of Scotland, has held several positions as head gardener in the New England States, and has contributed freely of his excellent practical knowledge to gardening periodicals. His brother, Alexander, is a well-known florist of Waterbury, Conn.

PETER BISSET, a native of Auchtermuchty, where he was born in 1869, served his gardening apprenticeship at Dalmeny Park, the seat of the Earl of Rosebery, under the late John Moyes. Mr. Bisset is now superintendent of the estate of "Twin Oaks," near Washington, D.C. He has raised several good Water Lilies, among them Nymphæa alba magnifica, N. O'Marana, Bissetii, and others, and is now engaged on a

work called *The Book of Water Gardening*. He has also given attention to cross-fertilisation of Roses, the new Tea Rose Queen Beatrice being one of his seedlings. Mr. Bisset is president of the Florists' Club of Washington, and a member of the executive committee of the American Rose Society.

So far as the pioneers in the profession are concerned, the conditions they faced are very clearly set forth in a letter written by Grant Thorburn to a London magazine in 1832. In that communication Mr. Thorburn said:—

"We have neither lords spiritual nor temporal in this country, with seventy thousand pounds sterling a year at their backs, and who to assist them in spending so much money, must employ perhaps thirty horsemen, a hundred labourers, and, it may be, thirty gardeners. Almost every man is his own gardener, and perhaps not in America are there three gentlemen who employ gardeners for the twelve months round. While our present system of government continues, as we have no hereditary estates, and property is consequently always shifting, we never shall have what are called overgrown fortunes. No man is able to employ ten gardeners in this country; therefore, while the present system continues in Britain, gardeners will meet with much better encouragment there than in America. . . . But, notwithstanding all this, a gardener may live very comfortably in America. Single men are generally engaged by the year, and receive from twelve to fifteen dollars per month, bed, board, and washing. It is expected from them to raise vegetables sufficient to supply the family; to take care of a few flower beds, and sometimes a small greenhouse." Mr. Thorburn then refers to the opportunity of saving money and engaging in market-gardening near a city, continuing: "But I would not advise a gardener who has a family to come here except he can bring with him one hundred or two hundred guineas, for it often happens that some months go over his head before he gets into a situation."

"A man wants only health, hands, a good character, and a good spade, to work his way in this country."

Three-quarters of a century has wrought considerable and gradual change. While our system of government is still the same, we are yet without lords, either spiritual or temporal, we have now a comparatively large number of individuals who have amassed fortunes running into the millions of dollars, and the majority of these men (and women) own big estates, and well-kept gardens and grounds. The latest directory of gardeners, published in 1904, gives the total in the United States and Canada as 2,000; the number may now have reached 3,000 in the two countries. There is, however, no surplus of good positions. Some of the head gardeners at Newport, R.I., have held their present places for from 15 years to a quarter of a century; it is the same elsewhere throughout the country, and there always seems to be a man "on the spot" to fill any vacancy, and, more often than not, a superabundance of applicants. The greater portion of the positions a-going are filled through the media of the various seed houses, a practice that has been in vogue since seed stores had their being here. The trained, capable, sober gardener, as against the incapable and dissolute, will, and does, of course always push his way to the front wherever he goes; but he has quite a good many drawbacks to contend against in America, perhaps not experienced to such an extent at home. Chief among these is the pretender, the man with the smattering of gardening, the garden labourer who poses as a professional, who is willing, as he is only qualified, to do all the "chores," as such work as attending horse, milking the cow, &c., is called, in addition to looking after the garden, imperfectly, and who works for little wages. Strange, too, many such are employed here in spite of their deficiencies. The competent, well-conducted gardener who comes to the United States in these days must take his chances, and when once he gets a foothold, make his merit felt in order to win success; and, it may be said, there is no room here for the discontented or the vicious.

Thorburn's advice respecting the married gardener—and for that matter the unmarried one, too—in regard to having a little nest egg to fall back upon still holds good. As in his day, quite a number of professional gardeners, as I have previously stated, enter the commercial business of growing plants, cut flowers, &c., for market; in fact, many of our most successful florists have at one time been private gardeners.

In regard to emoluments, I called on my friend, PATRICK O'MARA, of Peter Henderson & Company, New York, who has had more experience probably in the placing of gardeners in this country than any other one man, to get a line on present-day gardeners' wages. He informs me that these run from $720 a year, with house rent free, coal, and, in a good many cases, light, milk, vegetables from the surplus raised on the place, up to $1,500 a year, carrying the same perquisites. Places paying the latter figure are not numerous. Single men, under gardeners, receive from $25 to $50 a month, and board. Single men who have charge of places run about the same, depending on the character of the position. Most of the head gardeners are benedicts, and the number of assistant gardeners on any one place rarely exceeds, on an average, five or six.

Mr. O'Mara has, during the 20 years he has acted as the gardeners' friend, had a splendid opportunity to learn the traits, capabilities, &c., of men of the different nationalities that have come under his observation; and he gives it as his opinion, and without any disparagement of other men, that as a class Scotch gardeners head the list for all-round satisfaction. They have a greater power of concentration, are not so easily distracted by extraneous influences, such as affairs of church or state, as, say, an Irishman, or a German; and their chief glory lies rather in the achievement, the renown that attaches to difficulties overcome and victories won, than in the purely sordid side of the work.

It is facts like these, combined with the other native characteristics for which the men from ayont the Tweed are famed the world over, that in all things connected with horticulture, enable Scotland to still stand where she did at the top.

Alec Wallace, New York, November 5, 1906.

MARKETS.

COVENT GARDEN, December 27.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Azalea Fielderi, per dozen bunches	3 0- 6 0
— mollis, p. bch.	1 0- 1 6
Anemones, per dz. bunches	2 6- 3 0
Bouvardia, per dz. bunches	4 0- 6 0
Calla æthiopica, per dozen	5 0- 6 0
Camellias, white, per dozen	2 0- 3 0
Carnations, per dozen blooms, best American various	2 0- 4 0
— smaller, per doz. bunches	6 0- 9 0
Cattleyas, per doz. blooms	10 0-12 0
Christmas Roses, doz. blooms	1 0- 2 0
Chrysanthemums, specimen blms.	4 0- 9 0
— per dz. blooms	1 6- 4 0
— small blooms, per doz. bnchs.	3 0- 9 0
Daffodils, per bch.	1 0- 1 6
Eucharis grandiflora, per doz. blooms	3 0- 4 0
Gardenias, per doz. blooms	2 0- 3 0
Gypsophila elegans, dz bchs.	2 0- 3 0
Heather, white, pr. doz. bunches	3 0- 6 0
Hyacinth (Roman), p. dz. bunches	6 0-12 0
Lilac, white, p. bch.	4 0- 5 0
Lilium auratum	3 0- 4 0
— lancifolium, rubrum and album	2 0- 3 0
— longiflorum	4 0- 6 0
Lily of the Valley, p. dz. bunches	6 0- 9 0
— extra quality	12 0-18 0
Marguerites, white, p. dz. bunches	2 0- 3 0
— yellow, per dz. bunches	2 0- 3 0
Mignonette, per dz. bunches	2 0- 3 0
Narcissus, paper white, per doz bunches	1 6- 2 6
— English	2 0- 3 0
— Soleil d'Or, per dozen bunches	3 0- 1 0
Odontoglossum crispum, per dozen blooms	2 6- 3 0
Pancratiums, dz. bs.	3 0- 4 0
Pelargoniums, show, per doz. bunches	3 0- 5 0
— Zonal, double scarlet	4 0- 5 0
Poinsettias, per dz.	6 0 10 0
Primula (double white), dozen bunches	4 6- 6 0
Ranunculus, per dozen bunches	6 0- 9 0
Roses, 12 blooms, Niphetos	2 0- 3 0
— Bridesmaid	2 0- 3 0
— General Jacqueminot	4 0- 6 0
— Kaiserin A. Victoria	3 0- 6 0
— Caroline Testout	3 0- 6 0
— C. Mermet	2 6- 5 0
— Liberty	6 0- 8 0
— Mad. Chatenay	3 0- 6 0
— Mrs. J. Laing	4 0- 6 0
Stephanotis, per dozen trusses	4 0- 6 0
Tuberoses, per dz. blooms	0 4- 0 6
Violets, doz. bchs.	2 0- 4 0
— Parma, p. bch.	3 0- 4 0

Cut Foliage, &c.: Average Wholesale Prices.

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

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

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldi, per dozen	4 0- 6 0
— larger	9 0-12 0
Araucaria excelsa, per dozen	12 0-30 0
Aspidistras, green, per dozen	18 0-30 0
— variegated, dz.	30 0-42 0
Asparagus plumosus nanus, doz.	6 0- 9 0
— Sprengeri, doz.	9 0-12 0
— tenuissimus per dozen	8 0-10 0
Azaleas (Indica vars.), per doz.	30 0-42 0
— mollis, each	3 6-10 6
Begonia Gloire de Lorraine, p. dz.	8 0-12 0
— Turnford Hall, per dozen	8 0-10 0
Bouvardias, per dz.	4 0- 6 0
Callas, per doz.	12 0-18 0
Chrysanthemums, best, per doz.	12 0-21 0
— smaller, per doz.	6 0- 9 0
Clematis, per doz.	8 0- 9 0
— in flower	9 0-12 0
Cocos Weddelliana, per dozen	9 0-18 0
Crotons, per dozen	12 0-30 0
Cyclamen, per dz.	10 0-15 0
Cyperus alternifolius, dozen	4 0- 5 0
— laxus, per doz	4 0- 5 0
Dracænas, per doz.	9 0-24 0
Erica caffra	9 0-12 0
— hyemalis, p. dz.	12 0 15 0
— gracilis, p. dz.	10 0-15 0
— melanthera, dz.	9 0-18 0
Erica nivalis	18 0-24 0
Euonymus, per dz.	4 0- 9 0
Ferns, in thumbs, per 100	7 0-10 0
— in small and large 60's	16 0-25 0
— in 48's, per dozen	4 0-10 0
— in 32's, per dozen	10 0-18 0
Ficus elastica, per doz.	8 0-12 0
— repens, per doz.	4 0- 6 0
Hyacinths, per dz.	12 0-18 0
Kentia Belmoreana, per dozen	12 0-18 0
— Forsteriana, per dozen	12 0-21 0
Latania borbonica, per dozen	12 0-18 0
Lilacs, each	4 0-10 0
Lilium longiflorum, per dz.	18 0-30 0
— lancifolium, per dozen	18 0-24 0
Lily of the Valley, per dozen	18 0-30 0
Marguerites, white, per dozen	6 0- 9 0
Orange trees in fruit, each	3 6- 5 0
Physalis Franchetti, each	1 6- 3 6
Poinsettias, per dz.	9 0-12 0
Primulas, per doz.	4 0- 5 0
Selaginella, dozen	4 0- 6 0
Solanum capsicastrum, per doz.	5 0-12 0
Spiræa japonica, per dozen	9 0-15 0

Fruit Average Wholesale Prices.

	s.d. s.d.
Apples, per barrel, Nova Scotian:	
— Russets	18 0-20 0
— Greenings	12 0-15 0
— Starks	14 0-15 0
— Baldwins	14 6-16 0
— Blenheims	20 0-21 0
— Emperors	12 6-14 0
— Ribstons	18 0-20 0
— King of the Pippins	16 0-18 0
Canadian, per barrel:	
— Russets	21 0-23 0
— Greenings	12 0-14 0
— Ben Davis	13 0-14 0
— Baldwins	14 0-15 0
— U.S.A., (per barrel	21 0-35 0
— English, ½ bus.	3 0-10 0
— English, per bushel (46 lbs. to 50 lbs.)	6 0- 7 0
— Newtown Pippins, per case	10 6-16 0
Bananas, bunch:	
— West Indian, red	7 6 —
— No. 1	6 6- 7 6
— No. 2	5 6- 6 0
— Extra	8 0-10 0
— Giants	10 0-12 0
— Jamaica	4 6- 6 0
— Loose, per dz.	0 9- 1 6
Cranberries, p. case	12 0 —
Custard Apples, per dozen	4 0-10 0
Dates (Tunis), doz. boxes	4 6 —
Figs, Italian, box	0 6- 0 9
— French, p. box	0 6- 0 8
Grape Fruit, case	6 6-10 0
Grapes (English), — Black Hambro, per lb.	0 6- 1 0
— Alicante, p. lb.	0 8- 1 2
— Gros Colmar, per lb.	0 8- 2 0
Grapes, Muscat, per lb.	1 0- 1 0
— Almeria, barrels	12 0-18 0
Lemons:	
— Messina, case	9 6-17 6
Lychees, per box	1 0- 1 2
Mandarines, case	0 8- 1 6
Mangos, per dozen	3 0- 6 0
Nuts, Colnuts, per doz. lb.	6 0- 6 6
— Almonds, bags	54 0 —
— Brazils, new, per cwt.	65 0-70 0
— Barcelona, per bag	32 6 —
— Walnuts, per Grenoble bags	4 6- 5 6
— Cocoanuts, 100	10 6-13 6
— Chestnuts, Redon bags	10 0-11 0
— Italian bags	13 0-15 0
Oranges, per case:	
— Valencia	9 6-30 0
— Jamaica	10 0-13 6
Pears (English), ½ sieve	2 0- 3 6
— English, per bushel (56 lbs.)	4 0- 7 0
— Doyenne du Comice, p. dz.	6 0-12 0
— American, barrels	20 0 —
— French, Williams, boxes	6 0-10 0
— French, Glouts, crates	5 0- 5 6
— Californian, pr. case	12 6 —
Persimmons, per box	1 6- 2 0
Pineapples, each	3 6- 6 6
Plums (English), ½ sieve (28 lbs.)	7 0- 8 0
— French, box	0 8- 1 3
— French, ½ sieve	3 0 —
— Californian, boxes	6 0- 8 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes (French), per dozen	2 6 —
Asparagus, Sprue French, bundle	0 6- 0 8
— Paris Green, bundle	3 6- 4 3
Beans (French), packet	21 0-35 0
— Jersey, per lb.	1 0- 2 0
— Haricots, pr. bx.	1 0 —
Beetroot, bushel	1 3 —
Brussels Sprouts, per ½ bushel	1 0- 1 6
Cabbages, per mat (about 30 to 40 heads)	2 6 —
— red, per dozen	2 0 —
Carrots, French pad	3 0 —
— per bag, unwashed	1 3- 1 9
— washed	2 6
Cauliflowers, p. tally	11 0-12 0

Vegetables: Average Wholesale Prices *(continued).*

	s.d.	s.d.		s.d.	s.d.
Celeriac, per doz.	1 6	—	Onions (Dutch) bag	3 3	—
Celery, p. dz. bdls.	8 0	9 0	Parsley, 12 bunches	1 6	2 0
Chicory, per lb. ..	0 3	—	— ½ bushel ..	1 6	1 9
Chow Chow, p. dz.	3 0	—	Parsnips, per bush.	1 3	—
Cucumber, p. doz.	6 0	12 0	— per bag ...	2 6	—
Endive, per dozen	1 0	1 6	Potatos (French), crates, per lb.	0 3	0 4
Horseradish, foreign, per dozen bundles ...	15 0	—	Radishes (French), per dozen ...	1 6	—
Leeks, 12 bundles	1 6	—	Rhubarb (English), per dozen ...	1 9	—
Lettuces (French), per dozen ...	0 9	1 0	Salsafy, per dozen bundles ...	3 6	—
— French Cos ...	2 6	3 0	Savoys, per mat (holding about 30 to 40) ...	2 0	—
Mint, per dozen ...	3 0	4 0	Seakale, doz. pts.	16 0	18 0
Musbrooms(house) per lb.	0 10	1 0	Tomatos:—		
— Buttons, per lb.	1 0	—	— Canary, per bundle... ...	14 0	18 0
Mustard and Cress, per dozen pun.	1 0	1 6	Turnips, per cwt.	2 6	—
Onions (Valencia), case	6 0	—	— bags	2 6	—
— Egyptian, bag..	3 6	4 0	— washed, cwt. ..	2 9	—
— pickling, per bushel	2 0	2 6	Watercress, per doz. bunches ..	0 4	0 6
— French, ½ bag..	2 6	—			

REMARKS.—The severe snow-storm has curtailed the supply of all green vegetables such as Savoys, Brussel's Sprouts, &c., and this morning (December 27) the market was practically empty, so far as these were concerned. Celery, however, is plentiful. The sea fogs, and bad weather generally, delayed the transit of much foreign produce, and Tomatos are especially dear. Foreign Tomatos arrive in boxes, four of which nailed together by strips of wood, constitute a "bundle." All vegetables are very dear. The Christmas trade generally has been very good. *E. H. R., Covent Garden, Thursday, December 27.*

POTATOS.

Bedfords, 65s. to 70s.; Blacklands, 60s. to 70s.; Kents, 65s. to 80s.; Lincolns, 70s. to 90s.; Dunbars, 80s. to 95s. The trade for best samples has improved, but it is less good than it should be at this season. *W. J. C. & S., Covent Garden, December 27.*

COVENT GARDEN FLOWER MARKET.

The Christmas trade was disappointing. On Saturday morning there were very few empty stands, and most of them were nearly full. Prices advanced but little. The frost checked the trade for the more tender plants. I saw some Poinsettias, which were good and plentiful, passing through the streets, without protection, early in the morning when the ground was hard with frost. It seemed a pity, for after such an exposure the bracts would droop down in a few hours. Begonia Gloire de Lorraine was fully exposed at the same time. It is this sort of treatment that spoils the trade for tender plants, for if they reach the customers before showing the effects from cold they soon deteriorate, and the buyers being disappointed, do not purchase the same plants again. Azalea indica though fairly hardy will not stand exposure after being forced into flower. Ericas made better prices, but supplies were more than equal to the demand. Marguerites were over plentiful. Sprays were good. Chinese Primulas from several growers were better than we have seen them for several years past. Bouvardias as they appear now can hardly be recommended. Cyclamen vary, but some are very good. White Hyacinths (Dutch) are better than those seen a few days earlier, and the "Romans" are good. Tulips vary; some are very good, but others have been over forced; they are plentiful in white, red, and yellow colours. Solanums are still over plentiful, and many of them are far advanced and the berries drop easily. A fairly good trade has been done in foliage plants, but the supply is excessive.

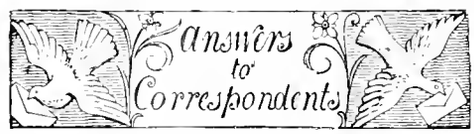
CUT FLOWERS.

These have been abundant, and very little advance was made in prices. A few extra fine Callas made 8s. per dozen, but 5s. was about the ruling price for very good samples, and 5s. was the highest price asked for Lilium longiflorum. Roses advanced in prices considerably; General Jacqueminot went out at 8s. per dozen blooms, and other sorts were proportionately dear. Carnations also cleared at better prices. It is true that many of the Chrysanthemums are rather far advanced, but even good, fresh white blooms did not rise in price, except it was for extra large flowers. Poinsettias instead of advancing were rather lower in price. Lily of the Valley continues plentiful. Eucharis remained on sale at closing time. Violets are not quite so plentiful and have advanced in price. Camellias were sold at low prices. Orchid blooms, particularly Cattleyas, are not so abundant as they were a few weeks ago. Daffodils were not quite so plentiful, the first crop being over, but Tulips and Roman Hyacinths were abundant. Narcissus Paper White, Glorious, and Soleil d'Or (imported) are plentiful and good. The "Minnie a" is much better, for we are now getting the true Acacia armata. Ranunculus is good and Roses are of fair quality. Eucalyptus globulus in flower is attractive. Foliage of all descriptions continues abundant. *A. H.*

ENQUIRIES AND REPLIES.

HEATH'S BOOK ON VIOLETS.—If Mr. Percy Allder (see p. 379) will make application to Mr. J. Heath, Violet specialist, Flinder, Kingskerswell, Devon, he will get all the information he requires. *G. Goddard.*

USE OF GAS LIME AGAINST EEL-WORM.—I am thinking of preparing soil for next year's Tomato growing, and as a safeguard against eel-worm, &c., have thought of mixing gas lime with the soil and keeping them exposed in the open air until wanted for use. How much gas lime will it be safe to put with a cart load of soil? If mixed now, will it be safe to use it at about the middle of March? There will be a large heap of about 40 cart loads; will the centre of the heap be sufficiently exposed for the air to act on the lime, or should it be turned occasionally? *B. A.*



AUBRIETIAS AND ALYSSUMS: *L. W.* Aubrietia deltoidea Campbelli (syn. A. Hendersoni) is perhaps the best Aubrietia for the purpose of growing on and covering a stone wall, as it possesses a vigorous constitution with a fine tufted habit, while its large flowers of a deep shade of violet blue are extremely attractive. "Dr. Mules," a new variety, with flowers of a rich glowing purple, is preferred by many, but while admitting it is undoubtedly one of the best three to grow in a limited collection, we should give it second place to the former. A. d. graeca superba may be chosen as the third variety, because of its good habit and the profuseness of its light purple flowers, which are produced over a very extended period. Of Alyssums the best for growing on walls is A. montanum, because of its dwarf and spreading habit. Its flowers are yellow and very sweet scented, and its foliage is a pleasing shade of glaucous green. For ordinary spring-bedding purposes A. saxatile compactum and A. s. flore pleno are best.

BOOKS: *O. T. M. Dictionaries* (Nicholson's) *and the French translation*, by Mottet, published at 26, Rue Jacob, Paris; *Bailey's Cyclopædia of American Horticulture* (Macmillan), Emil Koehne, Deutsche Dendrologie (Stuttgart, Enke); *Dippel Handbuch der Laubholzkunde* (Berlin Parey); *Beissner Handbuch der Nadelholzkunde* (Berlin Parey); *Veitch's Manual of the Coniferæ* (James Veitch & Sons); *Sargent Manual of the Trees of North America* (Constable & Co.) and the *Silva*, of the same author, in 14 large 4to volumes; *Fertilisation of Flowers*, Müller. Apply to Macmillan & Co.—*C. P. D.* We do not know of any complete or recently published book on the natural orders. The last edition of *Henfrey's Elementary Course of Botany*, now some years old, contains the fullest account of the natural orders for your purposes. We do not know any book in English on Geographical Botany. Messrs. Stanford, Long Acre, or Philip, Fleet Street, would supply you with a globe. Write for their catalogue. *Kerner and Oliver* can be had from our publisher, at the price of 30s., postage extra.

BREACH OF CONTRACT: *A. B.* If you were engaged for the situation, and the agreement is in writing, we think you would be able to claim a week's wages or a month's wages, according to the length of notice that would be necessary to terminate the same engagement after you had actually commenced work. Such claim, however, might be disallowed in a court of law if one of the parties could prove that he obtained certain knowledge after making the contract that justified him in denouncing it.

FRUITS OF PASSIFLORA EDULIS: *C. Bailey.* As the unripe fruits of P. edulis chiefly consist of juice, the only thing you can do is to boil it with sugar, and make a flavouring essence of it. If very liquid, you might add a small quantity of brandy before bottling the syrup. In a compost of Bananas, for instance, some of this syrup would be delicious.

GROWING VEGETABLES AND HARDY FRUIT FOR MARKET: *C. E. A.* Your question is a difficult one to answer, seeing that so much depends upon circumstances and local conditions. Therefore we should advise you to consider the matter from every point of view before embarking in the business of market-gardener with a view to securing an annual income of £250 from the growing and marketing of vegetables and hardy fruits from a given acreage. Careful consideration is especially necessary in your case, inasmuch as you possess no special knowledge of the business upon which you propose to embark. You would have to rely upon the honesty and business ability of a manager who possesses the knowledge you lack. If you decide to make the attempt you should try and obtain on lease five, 10, 15, or more acres within five or six miles of the large and populous city near which you write from, and which is also within easy reach of other important centres of industry to which you could send the produce in your own conveyances to the several shops. By arrangement with some of the stable people you might then load your cart with manure on the return journey. You should, at all events, endeavour to get land enough to admit of your keeping two or more horses for ploughing, &c., so as to dispense with as much manual labour as possible in the production and marketing of crops; doing everything thoroughly and at the same time economically. Put plenty of manure into the ground, cultivate it well, and crop it closely and in regular succession with the vegetables most in demand. If you have capital enough to start in this fashion you may succeed. Should you be able to erect some low, narrow houses for the production of Cucumbers, and procure a good man to grow them, you would stand a still better chance of securing an income. But there would be no use in your commencing vegetable-growing for market unless you were near to a large city like Manchester or Birmingham, and such like centres in which to dispose of your produce.

HEATING GREENHOUSE: *A. R. G.* From the further particulars with which you have furnished us, including the height of the ridge of house from the floor-line, &c., it appears the cubic space is considerably less than your estimate. Therefore, we think that four rows of 4-inch hot-water piping will be sufficient to ensure a minimum atmospheric temperature of 45° during severe weather in winter, especially if you have no front lights or only shallow ones. In this case we should recommend you to fix two pipes, putting the flow and return, one above the other, parallel with, and close up to, side wall on either side of the house, and fixing the position of the pipes in a line of say 2 feet from the wall-plate, on piers or suspension hooks, made so that the top 2 inches rests on the wall-plate, and is secured thereon with a screw. With regard to your last question our answer is, about 20½ feet.

JOURNAL FOR MARKET GARDENERS: *J. A. Fruit Grower, Fruiterer, Florist, and Market Gardener*, price 1d., published weekly at 1, 2, and 3, Salisbury Court, London, E.C., or *Profitable Farm and Garden*, price 1d., published weekly by Messrs. Collingridge, 148 and 149, Aldersgate Street, E.C.

PINEAPPLE DECAYED: *J. T.* The plants have been subjected to some error of culture, which has caused a check to them, resulting in the diseased condition seen. It is not due to a fungoid pest. We do not undertake to reply by post.

TUBEROSES INTENDED FOR FLOWERING IN SEPTEMBER AND OCTOBER: *Constant Reader.* The bulbs which are now coming to hand should be potted in successional batches, and those intended for late flowering should be kept in sand in a dry room. If they are to flower in September and October, the bulbs should be taken from the sand and potted up at the end of May or the beginning of June. Under ordinary treatment they will then produce flowers at the time stated. A good compost for the rooting medium is formed of loam and leaf mould, and if the pots could be plunged in a bottom heat of 65° 70° when the plants are about to start into growth, a much more even growth would be ensured. When the roots have become active, the plants should be placed in a position near to the glass, in a moist atmosphere, and be frequently syringed, to keep down red spider. All side growths should be rubbed off as they appear, thus the vigour in the bulb will be concentrated into the nourishment of the central growth, which will in due time produce strong spikes of flowers.

WOODLICE: *T. C.* Place hollowed slices of Potatos, Turnips, or other vegetables near their haunts, and examine these baits occasionally, when many woodlice will be found congregated on the under surface. Garden mats, rolled and placed on the ground, also act as excellent traps for these pests. See note published on p. 435 of last week's issue, under "Cockroaches," &c., for a proprietary poison that was recommended for destroying woodlice.

COMMUNICATIONS RECEIVED.—H. R. C. (next week; thanks for 2s. which has been placed in Orphan Fund Box)—H. Slater—A. C. B—E. M.—W. P.—C. & Co.—Mrs. A., Warwick—A. D. W.—W. B. & Sons—Hayward—Tyler & Co., Ltd.—O. T.—J. O'B.—F. M.—A. G. S—S. A.—, H. P.—A. & B., Ltd.—H. W.—W. H.—A. E. W. G.—H. W. G.—S. V., Wilts.—A. G. G.—K. D.—E. M.—A. C. H.—J. D. G.—T. C.—S. G. R.—J. W.—D. & R.—J. O. B.—J. M.—R. S.—W. W. P.—A. C. B.—H. W. W.—F. C. S., Cape Town.